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THE
NEW-ENGLAND JOURNAL

OF
MEDICINE AND SURGERY,

AND
Collateral Branches of Science,

CONDUCTED BY A NUMBER OF PHYSICIANS.

Vol. IX.

Homo naturæ minister et interpres tantum facit et intelligit, quantum de naturæ ordine, re vel mente, observaverit ; nec amplius scit aut potest.

FRANCIS BACON.

NEW SERIES, VOL. IV.

BOSTON :
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No. I.

Some Observations on the Physiology of the Teeth. By
THOMAS W. PARSONS, M.D.

[Communicated for the New-England Journal of Medicine and Surgery.]

FROM certain peculiarities of the formation, structure, and diseases of the teeth, they have generally been considered as disconnected with, and not under the influence of those laws of mutual dependence and relation, which are universally observed in every part of a living system, and which seem to be essential to its organization and support. The following observations may, perhaps, tend to illustrate some of the processes by which the living system provides for the nourishment and support of the teeth, during their connexion with it, and for their removal when that support can no longer be extended to them.

As the anatomical structure of the human teeth is very generally understood, I shall premise only such observations on that head, as seem to be immediately connected with the subject of this paper.

The teeth are very plentifully supplied with blood vessels; a number are distributed to each tooth, which are formed into a sort of cluster when they reach the extremity of the fang; some of them pass down upon the membrane with which the fang is covered, while others pass into the cavity of the tooth, at the orifice in the extremity of the fang.

In the body of each tooth we find a considerable cavity; from this there is a canal extending to the extremity of the fang, where it terminates in an orifice, at which the vessels

enter that pass into the cavity ; this is lined with a membrane similar in every respect to that with which the fang is covered.

The vessels on the external surface of the fang seem to be more immediately essential to the nourishment and support of a tooth, than those which enter into its cavity ; for we always find, that if these, together with the membrane on which they ramify, are destroyed, the tooth invariably becomes discoloured and loose, is deprived of its vitality, sensibility, and connexion, and finally drops out. The death of the vessels of the cavity following as a consequence of the destruction of those on the exterior of the fang.

How far the vessels of the cavity contribute to the nourishment and support of a tooth, I shall not pretend to decide. It is certain, however, that these together with the membrane with which they are in contact may be destroyed, and those on the exterior of the fang remain unaffected, the tooth still retaining its connexion with its socket as firmly as ever. Of this fact we have a frequent example in drilling into the cavity of a stump, from which the crown has been recently broken, for the purpose of securing an artificial tooth ; here, although the vessels of the cavity are destroyed, still the connexion of the stump with its alveolar process is maintained, although its sensibility is lost, which seems to be the only apparent effect resulting from the destruction of the vessels of the cavity ; and this without doubt arises, not from the destruction of the vessels of the cavity merely, but of the nerve with which they are accompanied, upon which the sensibility of the tooth immediately depends.

Each tooth is possessed of a high degree of sensibility ; this is manifested not only by the irritation of the nerve contained within its cavity, but under certain circumstances it is developed in the bony substance of a tooth ; if the enamel be broken away, or a portion of the fang denuded of its membrane, so that any part naturally covered either by the enamel or membrane is exposed, its sensibility is excited in a very remarkable manner. We frequently notice this fact, where the enamel has been broken off, leaving a portion of the internal part of the tooth exposed, and in those instances in which a part of the neck of a tooth has been deprived of its membrane in consequence of an accumulation of tartar around it.

The sensibility of a tooth seems to be immediately dependent on the nerve contained within its cavity ; for if this is destroyed, no sensation is produced by the application of those causes by which it is ordinarily excited.

From the circumstances noticed above, might it not be inferred that the vessels on the surface of the fang of a tooth are essential to its nourishment and support, and that it is by these chiefly that its vital connexion with the surrounding parts is maintained, while the principal object of those which pass into the cavity, is to nourish the membrane and preserve the nerve in a state fitted for the reception of impressions from without, and for their transmission to the brain?

On an examination of teeth that had been loaded for many years, I have noticed, in a number of instances, that the internal or bony part of each tooth immediately surrounding, and which must originally have been in close contact with the tin or gold foil, (the substances usually employed for loading teeth) had been scooped away, leaving the foil loose and unsupported on the inside, while on the outside, where it was surrounded by the enamel, it remained in as close contact, and as tight as when first introduced. As it is necessary, preparatory to the operation of loading a tooth, that all the decayed parts, or so much of it as is practicable, should be removed, I cannot think that this appearance could have taken place from a continuation of the caries; for the sides of the cavity, which were scooped out around the foil, were not at all discoloured, nor was there any change of texture, which would undoubtedly have been the case, had it followed as a consequence of the decaying process. If care be not taken to remove all the decayed part of a tooth previous to its being loaded, it will continue to decay after that operation is performed, though not so rapidly as before; but in this case we find the same appearances which accompany the partial death of a bone in any part of the body, although from certain peculiarities of the structure of the teeth, they are incapable of taking on those processes, by which, in other bones, the dead part is separated from the living. In fact there seems to be no natural process for the relief of a tooth when partially decayed, although we are possessed of a very successful artificial method by which a decayed tooth may be preserved, and the progress of the caries checked, provided it be adopted at an early stage of the disease.

By the operation of loading, the teeth are not only preserved in many instances for a number of years, but they are rendered equally serviceable and free from pain, as if no defect in them had ever taken place; and there is, perhaps, no operation less painful or more generally successful.

It is true, cases sometimes occur, in which, from the situation of the caries or other circumstances, the operation, even at an

early stage of the disease, might be wholly impracticable ; but these are comparatively rare.

I have never observed that the internal, or bony part of a tooth, surrounding the foil, was scooped away in any instance in which it had been loaded for a less term than six years, and even then the cavity around the foil is generally small, yet sufficiently distinct.

In a tooth that had been loaded for nine years, which it became necessary to extract in consequence of a disease of its fang, the internal part of the tooth originally in contact with the foil had been removed to such an extent, that a portion of the foil was pressed in, although the orifice through the enamel was not broken away, nor was it probably any larger than at the time the foil was first introduced. In no instance have I ever known any pain to follow as a consequence of the removal of the internal part of a tooth, (with the exception of those cases in which it took place from a continuation of the caries,) so long as the foil remained closing up the orifice externally ; when this is removed the tooth not unfrequently becomes painful ; and if another piece of foil be not introduced soon after the removal of the old piece, the tooth very often becomes so painful, as to render a repetition of the operation wholly impracticable.

From the circumstances noticed above, relative to the removal of that portion of the internal or bony part of a tooth immediately in contact with the foil, may we not reasonably infer that the teeth, in common with other parts of the body, are possessed of an absorbent system, by the action of which, processes are instituted for the removal of any substance foreign to themselves ; and that this appears to take place, not in consequence of any sensible irritation, but by that sort of intelligence (if so it may be called) by which every part of a living system becomes, as it were, conscious of the presence of any matter, foreign to itself, and which actions have for their object, either its removal or disconnexion with those parts with which it is in contact ?

Admitting the correctness of the inference respecting the absorption of the bony part of a tooth, it cannot be applicable in any proportionate extent to the enamel. This substance presents no appearance in its healthy or sound state from which we should be led to suppose, *à priori*, that it was connected with, or formed any part of a living system ; it has been said to be incapable of growth, sensation, or disease, i. e. of disease as originating primarily within itself. Mr. Fox (in his excellent work on diseases of the teeth) thinks that caries

originates primarily in the bony part of a tooth, and continues to extend until it has reached the enamel, which, being deprived of its support, is consequently crumbled away. That this is the fact in perhaps a large proportion of cases, I think is more than probable; yet I cannot but suppose instances are not uncommon, in which the enamel of a tooth becomes diseased, independent of any affection of its internal part.

We not unfrequently notice that a sound tooth becomes carious, that has remained for any length of time in contact with one that is decayed; and although this might perhaps take place from contact merely, yet I do not think it by any means conclusive that it does so from that circumstance alone.

I think we have the clearest evidence of disease originating in the enamel, in those instances (which are by no means unfrequent), in which a portion of the enamel presents the appearance, as if it had been cut out transversely with the edge of a sharp file, leaving the bony part of the tooth underneath, white and sound.

This disease, which has been called by Mr. Hunter, decay by denudation, seems to arise from some original defect in the formation of the enamel; for in those teeth in which it takes place, we generally find the surface of the enamel ridgy and uneven, and of a bluish colour.

This disease generally commences on the surface of the enamel where it is thinnest. We notice first a brownish coloured line extending transversely across the tooth, which continues to grow gradually darker until it becomes quite black; the enamel, if examined at this time, generally presents a sort of honeycomb appearance, and small particles of it are gradually crumbled away until all the discoloured part is removed.

In many instances the disease appears to stop here; in others it extends towards the edge of the tooth, removing the enamel from its surface, to which this disease seems to be confined in a very remarkable manner; and never, so far as my observation goes, extending to the internal or bony part of the tooth. The decay of the teeth in this case, which most generally follows, seems to take place as a consequence merely of the loss of their enamel, and not from a continuation of the denuding process.

This disease takes place on the external surface of the incisors and cuspidati of the upper jaw, and in the lower jaw on the surface of the cuspidati, bicuspides, and molares. Whether these are the only teeth liable to this affection, I cannot say; I have never noticed it in the bicuspides or molares of the upper, nor in the incisors of the lower jaw. There ap-

pears to be a beautiful accommodation of structure, and properties in the enamel, to the particular situation and uses of the teeth, by which these organs are protected, and rendered insensible to the innumerable accidents, to which they are continually exposed.

In a large proportion of individuals at a certain period of life, the system seems to be incapable of extending to the teeth that support by which their connexion had heretofore been maintained; and this inability on the part of the system, to provide for their further continuance, is indicated by an absorption of the alveolar processes, in consequence of which, the teeth become gradually loose; their connexion with the alveoli is destroyed, and they finally drop out.

In every tooth that I have examined, which had been protruded in consequence of the absorption of its alveolar process, I have invariably found, that there was no appearance either of the vessels themselves, or of the cavity in which they are usually contained, which is completely closed up by the deposition of bony matter; and so far as my observation goes, I am led to believe, that this change in the organization of a tooth, invariably precedes the absorption of its alveolar process; for I have never known an instance, in which this took place, so long as the vessels of the cavity remained. I am inclined to believe, that previous to the absorption of the alveolar processes, not only the vessels of the cavity are removed, but that those are also subject to the same law, which pass into a tooth on the external surface of its fang, so that all the vessels which had circulated in the substance of a tooth are removed, and bony matter substituted in their stead.

The absorption of the alveolar processes appears to me to follow, not as a consequence of the removal of the vessels of the cavity of a tooth, but of those which pass into its fang on its external surface; for if it took place from the loss of the vessels of the cavity merely, I see no reason why the same should not follow when they are destroyed by mechanical violence; for in both instances the effect, so far as relates to the vessels themselves, must be the same. By all those causes, the tendency of which is to excite inflammation of the alveolar cavities, or of those parts contiguous to them, their absorption is very much accelerated; the irritation produced by an accumulation of tartar around the necks of the teeth, is a very frequent cause of their premature expulsion.

The loss of the teeth is one of the proverbial characteristics of old age, and at that time of life it generally takes place from an absorption of the alveolar cavities in which they are con-

tained; this appearing to be a process instituted for the removal of the teeth, at a time when, from the loss of their vitality, they are incapable of maintaining those actions necessary for their connexion with the living system.

As we advance in years, there seems to be a sedulous care, on the part of the system, to limit the extent of its actions and to abridge its labours, by refusing to particular parts of the body that support necessary for their connexion with it; and it is, probably, in obedience to this law of the animal economy, that the processes accompanying the protrusion of the permanent teeth are to be referred.

Injection of Medicinal Substances into the Veins.

[Communicated for the New England Journal of Medicine and Surgery.]

THERE has been a very current report, that some physiologists in Europe have made the experiment of administering medicinal substances, by injection, into the blood vessels. Sir Everard Home has been particularly designated, as having thus successfully used the *colchicum autumnale*, or meadow saffron, in the cure of gout, as well for himself as his patients. Endeavouring to arrive at the source of these reports, I have not been able to discover any other, than that Sir Everard has *successfully employed* the *colchicum*, as a remedy in gout, in the mode *commonly used*, for the introduction of medicines into the human body. There is in truth, abundance of negative proof that no such experiments have been made by Sir Everard, nor by any other person; since the philosophical and medical publications, made since that time, at which this story was circulated here, are entirely silent on the subject; and gentlemen who have recently arrived from Europe have not any knowledge of these pretended experiments, nor even of reports relating to them. There can be no great doubt, that such a mode of introducing remedial substances into the animal economy must have presented itself to physicians; and we cannot but be surprised, that it has never actually been employed. As the subject has been started and frequently brought forward of late, I thought it might be useful to inquire what grounds there are for pursuing a course on this matter, and will therefore relate some trials made by different persons at different times, to show whether it be possible to introduce medicines or other foreign substances into the blood-vessels of animals with safety and advantage.

The transfusion of blood seems to have some bearing on this subject. All of us know that in the century before the last, this process was performed, first on animals, afterwards on men. The doctrine of humoral pathology, which taught that diseases reside in the blood, very naturally led, in an age of experiment, to the idea of substituting the blood of a healthy animal for that of one diseased. The first experiments were made on quadrupeds and birds, with perfect safety to the animal receiving the transfused blood. After repeating them a sufficient number of times to be satisfied they were not dangerous in quadrupeds, they ventured, in Paris, to transfuse the blood of a sheep into the veins of a stupid youth. The philosophers thought there was a remarkable brightening of the faculties of the young man; the experiment made great noise, and it was generally admitted that if the wits would be sharpened, undoubtedly the bodily functions might be renovated, by the new practice. After a number of years of innocent experiment, an unfortunate youth, of a noble family, had an inflammation of the bowels from the transfusion of some calf's-blood; and this broke up the practice.

We may next inquire the effect of simple and inert substances thrown into the blood vessels. The following experiments were performed by a French physiologist in 1811. He threw twenty cubic centimetres of atmospheric air into the external jugular vein of a dog. The *pulse* immediately became *quickened*. A noise was heard issuing from about the region of the *heart*, like that made by beating the whites of eggs with water. After *a minute and an half*, no other effect was apparent. Thirty cubic centimetres were employed. The noise was renewed; the animal gave some cries, as from pain; his respiration became loud and difficult; his limbs stiffened; the urine was forcibly expelled. These symptoms were not accompanied with any derangement of the brain or senses: they lasted a very short time and then subsided, so that at the end of four minutes, the animal was perfectly calm. A *third* injection at the expiration of *another minute* was not followed by any sensible change. Fifteen seconds afterwards, thirty cubic centimetres were injected, making in the whole 100; the pulse immediately failed to beat; the animal made a few deep inspirations and then ceased breathing. Nothing remarkable was observed in the dead animal, except the mixture of air and blood in the cavities of the heart. Air being injected into the carotid *artery* of a dog, produced no effect when the quantity was very small. On increasing the quantity, which was *still very small*, compared with that thrown into the *veins*, the ani-

mal fell down apoplectic. His senses were destroyed. His respiration, circulation, and other organic functions went on very well for three hours, and then he expired. *Oxygen gas* and *carbonic acid gas* being employed in the same manner, it appeared that *much greater quantities* of these gases could be safely admitted into the blood vessels, than of atmospheric air. It required about 300 cubic centimetres of oxygen gas, and *more* than that measure of carbonic acid gas, to produce the effect of 100 centimetres of atmospheric air.

The effects of *medicinal* substances, introduced into the blood vessels, appear to be greater than when the same articles are applied to the coats of the stomach.

A full grown dog, of middling size, had six grains of tartar-emetic dissolved in three ounces of water, injected into the jugular vein. Vomiting was immediately produced, and soon after alvine evacuations. The respiration became difficult; pulse frequent and intermittent. A general uneasiness and tremor of the limbs were the immediate precursors of death, which happened soon after. On examining the body, the lungs were inflamed, and also the whole extent of the digestive canal. Four grains of the same substance produced death, with similar symptoms, in twenty-four hours. It should be known, however, that if the esophagus is tied, after four grains of the same substance have been introduced into the stomach, the animal, after efforts to vomit, dies in three or four hours.

Five grains of the nitrate of bismuth, in three tea-spoonfuls of water, were injected into the jugular of a small dog, at noon. At four o'clock the animal remained unaffected by the medicine. The next morning at 10, he made efforts to vomit; emitted cries of uneasiness; his pulse was accelerated; his limbs weak and agitated. His strength gradually sunk, and he died at 3 P.M. Sixty grains of sub-nitrate of bismuth, were thrown into the stomach of a dog, at 11 o'clock. In six minutes he attempted to vomit. He lived that night and the following day, and died the second night.

Four drachms of alcohol, thrown into the jugular vein of a dog, produced the most sudden death. Two drachms of the tincture of cantharides, injected into the jugular vein of a small dog, made him dizzy, and like one intoxicated with wine. At the end of five minutes he vomited. In ten minutes the vertigo ceased, and the animal appeared perfectly well afterwards. A drachm of powdered cantharides, in a drachm and an half of oil of almonds, produced violent derangement of most of the functions, and death in an hour and an half.

These experiments have been taken, at hazard, from a multitude of others, intended to ascertain the operation of various substances on the animal economy. They were not designed particularly to show the effect of these articles on the blood vessels. Of course we have no opportunity of presenting the results of the application of medicines to the veins, when they were extremely diluted and weakened. No experiments on the more common articles of the *materia medica* have been made, so far as I know; nor have we records of the operation of any kind of medicinal substances on the blood vessels of the *human body*.

From the experiments related we may, I think, fairly draw the following conclusions :

1. That *inert* foreign substances may be introduced into the veins of animals, without sensible effects, except from their volume.

2. That the most inert substances, when employed in a certain volume, prove fatal.

3. That medicines, thrown into the veins, produce their specific effect on the animal economy, as emetics, purgatives, &c.

4. That this effect appears to be greater, than when the articles are made to act on the stomach.

5. That in the *human* body, foreign substances, homogeneous with the blood, may be thrown into the veins with safety, in small quantity; but that if the quantity be large, they are injurious, even though the effect of pressure be obviated.

From these conclusions we are led to an *opinion*, that some medicinal substances might be injected into the human veins, in a very diluted state, and in small volume, without very great danger. That, of course, their operation will be uncertain, and not altogether without risk of bringing on inflammations of organs, and of the coats of the veins. The probability of such ill consequences is much strengthened by the consideration, that nature has set triple and quadruple barriers to the introduction of foreign substances to the blood, through the medium of the stomach, or through the general absorbent system, and these are the nearest natural avenues to the blood vessels.

Observations on Nightmare. By WILLIAM SWEETSER, Jr.
M. D.

[Communicated for the New England Journal of Medicine and Surgery.]

NIGHTMARE was noticed at quite remote periods of antiquity ; and we find it spoken of, both among the Greek and Roman writers. Though, from the frequency of its occurrence and its peculiarly distressing nature, it has excited considerable attention, still the ideas entertained with regard to it, are quite vague, even at the present day. The various names, which, at different periods, it has received, are all expressive of the peculiar sensation it produces ; that is, of a heavy weight pressing upon the chest. Thus the Greeks called it *εφιαλτης*, from the verb, *εφαλλομαι*, signifying, I leap upon. The Latins called it, *incubus*, from *incubo*, I lie upon. In English it has received, among the vulgar, different names ; as mare-riding, hag-riding, and wizard-pressing. It is now commonly known by that of nightmare, a term originating, probably, in superstition.

“ So on his nightmare, through the evening fog,
Flits the squab Fiend, o’er fen, and lake, and bog,
Seeks some love-wilder’d maid, with sleep oppress’d,
Alights, and, grinning, sits upon her breast.”

The following are its symptoms :—A sensation, exciting the idea of a weight lying upon the chest ; a difficulty of breathing, which is often excessive. These symptoms are always accompanied by some frightful dream. Thus, the imagination will often lead us to the brink of a precipice, from whence we expect every moment to be precipitated, but are incapable of the slightest movement to escape this peril. Sometimes we imagine ourselves actually falling, and our agitation becomes so great, that we awake with a sudden start. Again, we fancy that we are beset with thieves, murderers, or with evil spirits, but in spite of all our efforts, can neither fly from them, nor defend ourselves from their assaults. Sometimes, after great exertion, we are able to cry out for aid ; and this cry is always indicative of the greatest terror and distress. There also is often made an indistinct moaning noise. It now and then happens, that the muscles of locomotion are under the control of the will ; and persons have been known to jump from the bed, and run about the room, calling out for help, apparently in great agony. I once knew a person, in whom the affection

always showed itself in this way. In nightmare we not unfrequently are conscious of the state under which we suffer; conscious also of the necessity for exertion to free ourselves from it, but all efforts of the will fail of their usual influence. The countenance is indicative of the distress endured. It exhibits a lividness, approaching to its appearance in asphyxia. Sometimes the eyelids are wholly, or partly, open, motionless, and the eyes fixed, which, added to the distortion of the features that often occurs, gives the physiognomy altogether a peculiarly horrid appearance. A partial sweat, in this state, will often break out and stand in drops about the forehead. Sweating sometimes becomes general. I have found the pulse, immediately after awakening, never having examined it during a paroxysm, full, frequent, and remarkably soft. When aroused, often the sense of oppression in the chest will remain, and, for sometime, there will be noticed a shortness and quickness of respiration, together with palpitation of the heart, similar to what we observe in persons who have taken violent exercise, or who have long kept in their breath. The symptoms of nightmare, which have now been stated, afford us some grounds on which we may found an opinion of its proximate cause. Relative to this, there have been, and still are, many different theories. Some have believed it owing to a congestion of blood in the brain. Others have supposed, that it arises from a stagnation of this fluid in the heart and its large vessels. Others, again, have considered it dependent on a congestion in the sanguiferous system of the lungs. It has likewise been referred to the stomach, and to the nervous system. One reason for regarding it as a nervous affection, and this the principal, has been, because there is noticed in it a cessation of voluntary power. Now we should recollect that this apparently always happens in a state of natural sleep. In nightmare, then, here seems to consist the difference; we feel a necessity for exertion to escape some fancied danger, hence arises a volition, but no action following, as we for the most part find to be the case, we grow conscious of a cessation of influence from the will. From the phenomena that have already been noticed in nightmare, and from observation that the causes exciting it always, in a greater or less degree affect respiration, I am led to believe that its proximate cause is in the lungs, or, perhaps to speak more properly, in the blood, since that principle in the atmosphere, which changes the quality of this fluid, fitting it for the purposes of the animal economy, is not, from causes that seem involved in obscurity, furnished in due quantity to produce its full and necessary

effect. The different causes that excite nightmare, appear always to exert either a direct or indirect influence on the pulmonary function. It will generally take place in the predisposed, when much food, or food of an indigestible nature, is taken into the stomach soon before retiring to rest. Now it is apparent that in a waking state, if digestion is performed with difficulty, the respiration becomes affected; it grows short, quick, and irregular, accompanied with a frequent sighing. Of this fact there can be no doubt, though the cause of it is somewhat mysterious. The gastric organs may here sympathetically influence the respiratory, or we may account for it on the principle, that the increase of activity in one organ, if we here allow an increase of action in the gastric organs, supposes a proportional diminution of activity in all the rest; or we may attribute it to an influence from both these causes. It is probable, too, that the pulmonary function may be affected by the stomach, in a state of distention, interfering with the function of the diaphragm. When we fall asleep under the circumstances above stated, respiration, from causes with which we are unacquainted, does not go on with the same perfection as when awake. How the suspension of voluntary influence affects this function, we know not. Sighing, which is a long and deep inspiration, followed by a sudden expiration, and showing a deficiency of atmospheric air in the lungs for the purposes of the animal economy, seems, in part, owing to an effort of the will, and always takes place in those states of the system in which this affection is most apt to occur. Now should this be true, that sighing is in part owing to a voluntary effort, during sleep it would not so readily take place, or perhaps not at all; the consequence of which would be, under certain circumstances, a deficiency of atmospheric air in the respiratory organs. We are not, however, sufficiently acquainted with the nature of the function of respiration, to indulge in speculations of this kind. Did we know the exact relation in which this function stands to the two lives, the animal and organic, we might then, perhaps, be capable of forming a more correct idea of the effects upon it from a suspension of voluntary power. That it goes on independent of the will, seems evident; we know, also, that it is under the control of the will, but whether under any circumstances of the system it requires the aid of this power, we are ignorant. How it may be influenced by the state of the organs of organic life in sleep, we cannot tell. May there not be more sympathy exerted in this life, in consequence of the animal powers being suspended? This would appear probable on the theory,

that there is a determinate sum of powers spread throughout the system, which always remains the same. We must here, however, acknowledging our ignorance of causes, be content to observe their phenomena. "Such," says Bichat, "are the narrow limits of the human understanding, that the knowledge of first causes is almost always denied to it. The thick veil that covers them, envelops in its innumerable folds whoever attempts to rend it asunder." Many of the different passions, for these will often operate during sleep, bring on nightmare, particularly such as are of a depressing kind. Now all these, more or less, affect respiration. In grief, we have a sense of suffocation, and frequent sighing takes place. In fear, breathing is short, quick, and much disturbed. In plethoric persons, this affection often occurs; and in such we generally find, that the respiration is easily affected. It is common in diseases of the heart, hydrothorax, &c.; and here we know that powerful efforts are often necessary to prevent asphyxia. Persons who possess much sensibility and irritability, and have delicate stomachs, as those of the nervous temperament, are generally subject to it; and in such habits we, for the most part, find that the respiratory function is readily disturbed. The healthy and robust are not often troubled with nightmare; and in these we know that respiration usually goes on with ease, which may happen because there is less sympathy exerted among the different organs, or because the powers of the system in general are greater, each organ having sufficient energy within itself for the performance of its task. The question may now be asked, why is nightmare more apt to occur when we lie on the back than in other positions of the body, since this seems favourable to the easy performance of the pulmonary function? Of the fact, I cannot admit a doubt. I would not, however, be understood to believe, that this posture alone can induce the affection, but merely that it is favourable to the operation of its exciting causes. Its comparative frequency in this, and other positions of the body, has been accounted for on the supposition, that here the stomach presses on the aorta; also that the heart presses on the large trunks of the pulmonary veins, giving rise to a congestion of blood in the lungs. It has, likewise, been supposed that the abdominal viscera interfere more with the function of the diaphragm in this, than in other postures of the body. Many, however, would be unwilling to believe that nightmare could here be produced by these mechanical causes alone, because, on analogical reasoning, it would seem difficult to admit the idea, that a Being who has so nicely constructed us, and showed such

care in adapting the different organs, each to its particular situation, and who has established between them so nice relations, should suffer such as possess in the animal economy functions so important, to interfere with each other in a posture so common, and apparently, so natural. Nightmare, however, we should recollect, is the effect of morbid actions in the system, in which state those relations that hold between the different organs in health, become disturbed. To what extent, therefore, mechanical causes may operate in the production of this affection, would be difficult to say, that they may have some effect is not improbable. When we lie on the back, the relaxation of the system becomes more general; a less number of the animal muscles come into play; but whether this by sympathy could affect the function of respiration, we know not. To conclude, then, I consider nightmare to take place in this way:—There is a deficiency in quantity of atmospheric air inhaled, to effect the necessary change on the blood, in its passage through the lungs. Blood, then, unfit for the purposes of life, or partly venous, is sent to the different parts of the system. This induces a sense of suffocation; the fancy, then, from the laws of association, places us in some imminent danger; this we make an effort to avoid, which, availing nothing, we grow conscious of a cessation of voluntary influence. It is plain, from the nature of this affection, that should it exist in any considerable degree, and be long continued, death would be its inevitable consequence; and I believe with Dr. Rush, that most persons who retire to rest, apparently in good health, and are found dead in their beds in the morning, die from this complaint. That power, however, of the system, which is ever watchful for our welfare, does not here often desert us; but to warn us of our danger, raises in the imagination some dreadful phantom, the fear of which stimulates us to exertion; and this at length becomes so powerful that we awake. Those frightful images, then, which here rise up before the fancy, are not to be regarded with horror; for they come, not as enemies, but like guardian angels, to rescue us from a painful death.

An Improved Bougie.

[Communicated for the New England Journal of Medicine and Surgery.]

MESSRS. EDITORS,

AS every invention, which is calculated to facilitate the treatment of diseases, particularly those that are intractable and tedious of cure, is an object of some consequence to medical practitioners, I have taken the liberty to make public the following description of an improved Bougie, through the medium of the New England Journal of Medicine and Surgery, should you think it worthy a place in that very valuable work.

Having had occasion to make use of the bougie in cases of stricture in the urethra, *frequently*, and been foiled in my attempts, from a well known deficiency in the common cloth bougies, to sustain the force necessary to introduce them through the strictured part, particularly the smaller sizes, after being softened by the warmth of the parts; and having had recourse to wires and whale-bone, of different sizes, placed in the centre of the instrument, which rendered their use hazardous; and from the very great difficulty as well as expense of obtaining the elastic kind, and which are considered the best fitted for the purpose, I was induced, from necessity, the parent of invention, to seek for a substance which would withstand the extremes of temperature, with trifling alteration, sufficiently firm to support the force required, with a proper degree of suppleness; susceptible of receiving a fine surface without any coating, and perfectly innocuous to the delicate urethral membrane.

This substance I found in the simple raw or untanned bullock's hide. My first experiment was made by taking a piece from a sugar box, such as is passed round the boxes, in which sugars brought from Cuba are generally packed.

My second experiment was made by using the hide from the lime vat of the tanner, before it was immersed in the tanning liquor. The lime, in this case, renders the texture of the skin firm, corneous, and completely unsusceptible of being softened by moisture. This change of texture can be varied at pleasure, depending wholly on the time that the hide is exposed to the action of the lime. The latter state of the pelt, I found, on experiment, to be best adapted to the smaller sizes, and the former to the larger sizes; either, however, will answer the most sanguine expectation of the experimenter. The method

of making, is simply to moisten the *unlimed raw* material, and press it between two level surfaces until dry, when strips of a proper length and width may be cut with a sharp knife, then laid on a board in which there is a superficial groove sufficient to retain it while the sides are made straight, and the edges removed, bringing it to an eight square. This may be done by the assistance of a small jointer or plane; the process may be completed with a fine file and common polishing powder. The limed hide may be worked precisely in the same manner as the above, taking care to preserve the material in the shape proper for cutting into strips, as soon as it is taken from the lime vat, otherwise it would be impossible to shape it after it has once dried in a crooked and contorted form.

Since the opinion is abandoned, that there is nothing in the bougie *per se*, except its mechanical action, it only remains to find a simple unirritating material possessing a certain degree of suppleness, while it is sufficiently firm to maintain its shape.

The objections to the cloth bougie are sufficiently obvious without detail, and no less so to the coated elastic catgut; their surfaces soon becoming rough and unfit for use. The simple plain catgut is equally objectionable, being liable speedily to untwist and to become supple from warmth and moisture, and of course useless.

All these objections are obviated in the raw hide bougie, not requiring a coat, if perfectly made, neither acted on by moisture nor heat, during the time necessary for using.

If, from the unskilful manner of making, the surface is not perfectly smooth, it may be coated by rubbing with white wax and completely polished. This may be repeated, with very little trouble, as often as it becomes necessary.

JEREMIAH WILLIAMS.

Warren, Oct. 5, 1819.

Ergot.

[Communicated for the New England Journal of Medicine and Surgery.]

IN Rogier's periodical work, entitled "*Observations sur la Physique, sur l'histoire naturelle, et sur les Arts,*" for July 1774, is a paper containing the *Different opinions of the principal authors, who have written upon Ergot*, which perhaps has not been fully consulted by all in this country, who

have written upon this disease in rye. It extends from p. 41 to p. 52 in quarto.

In the next number, namely for August 1774, is a letter addressed by the celebrated M. Parmentier, apothecary; major to the Royal Hotel for Invalids, to the Abbé Rogier, as editor of the above Journal. M. Parmentier had denied the charge made as to the bad effects of this disease in rye; and in so doing, had gratified a certain Madame Dupille, who in consequence wrote him the following letter:

"SIR—I have read in the last Mercury, of June 1774, an extract from your publications respecting the ergot in rye. It is some years since I heard of the danger from this grain, and of the frightful diseases which it was said to have produced in Alsace (if I remember rightly) or its vicinity. This surprised me greatly, since, from my infancy, I know one of its properties which has never produced any mischief within my knowledge or that of my mother, who caused many women to take it in difficult labours. I know not from whom she received the receipt; for like myself she has no knowledge in medicine, beyond the desire of assisting those who are in pain. Her prescription was as follows; and it is the same that I have adopted with different women, and particularly with the farmer's wife at Bertichere, near Chaumont-Vexin, (which is the place of my residence.) She was assisted by it, and has had a second child, and is now about to lie in with a third.

"I pound this grain (which we commonly call *false rye*) as fine as I can. I then take a thimble-full, which I cause to be swallowed in a spoonful of water, wine, or broth, (as either may be at hand.) The patient ought to be delivered in a quarter of an hour. I do not, however, by the advice of my mother, give it, except when it is certain that the presentation of the child is good, and nothing is to be complained of but tardiness in the delivery. None of the patients so treated have ever been ill afterwards; and yet, at this critical period, they are certainly more liable to suffer from bad influences, than at other times.

"This, Sir, is the extent of my own experience, and that of my mother, as to the ergot in rye. If the detail of it can be of any use to you in your inquiries, it will afford me much satisfaction. Your dissertation has given my mind relief as to the above remedy, which I had feared again to administer after what I had lately heard. I am now restored to the gratifying power of being able, in a quarter of an hour, to free a woman from the sufferings belonging to a long and painful labour; for, as my mother has assured me, so I have myself witnessed, that the patients are in truth delivered in a *quarter of an hour*."

Hernia Cerebri. By JAMES SPAULDING, M. D.

[Communicated for the New England Journal of Medicine and Surgery.]

A CASE of fungus cerebri, successfully treated by excision, was communicated in the last number of the Medical Journal, by Dr. Jonathan A. Allen. In that communication, Dr. Allen states, in confirmation of his practice, that I extirpated a tumour of this description, and that my patient recovered. It is true, in a letter to him, I made slight mention of a circumstance which might lead him to such a conclusion. The case alluded to, was that of a young man, who was kicked by a horse, and a portion of the frontal bone, near the external angle of the eye, beaten in upon the brain, accompanied by an extensive fracture. Upon examination it was found, that a ragged piece of bone, about as large as a dime, or a sixpence, had pierced the dura and pia mater. It was agreed in consultation to remove it; but this could not be done, owing to the irregularity of the opening, without applying the trephine. A considerable degree of inflammation gradually supervened; when about the fourth or fifth day from the time of the accident, the integuments, covering the fracture, began to rise in the form of an hen's egg, and the brain soon burst out. After the protrusion was complete, the patient's symptoms were evidently better. Compression was tried; but if, at any time, the bandage was drawn too tight, it was sure to produce violent twitchings of the whole body. *The surface of the part protruded was daily pared off, attended with the loss of about a table spoonful of blood.* It at length adhered to the integuments, and receded within the skull, leaving a depression behind, at which place the pulsations of the brain were for some time seen distinctly.

Had I stated the whole case to Dr. Allen, he would readily have perceived it could not have been quoted in confirmation, either of his theory or practice. This kind of accident (if it may so be called) is much more properly termed a hernia than a fungus. If the parietes of the abdomen should be broken, and a portion of its viscera protrude, it would not be called a fungus. But why is this term applied to every protrusion of the brain? Is it because this organ, in its colour and texture, somewhat resembles proud flesh? The brain, without the skull, must necessarily undergo some alteration from its exposure to unnatural agents; still I think that hernia, in many cases, will be a better term than fungus.

Various causes have been assigned for *hernia cerebri*. I believe the most frequent one to be an *over distension* of the vessels, whereby the brain is swollen and bursts out in the manner above described. Paring it off during the inflammatory stage, as it is attended with a loss of blood, undoubtedly is of service. Compression, it should seem, is of little or no use. In short, the principal thing to be attended to, is the inflammation, and for this we have well known remedies. It is worthy of remark, that in the last stages of the inflammation, the patient will require tonics and stimulants, such as bark, wine, opium, &c.

The case mentioned by Quesnay, as stated by S. Cooper, is not correctly quoted by Dr. Allen. He says the patient tore off the tumour and recovered, when it should be, *tore off the coagulum and the cavity filled up*.

If my views of the above subject are correct, *hernia cerebri* does not require excision. It is no doubt proper to extirpate tumours and fungusses of the brain, providing it can be done without wounding any considerable vessel, and of this the surgeon can judge only from their situation.

Village of Montpellier, Dec. 1st, 1819.

Case of Delirium, consequent to Intemperance. By GEORGE PARKMAN, M. D.

[Communicated for the New England Journal of Medicine and Surgery.]

* *, æt. 30, has been very intemperate these twelve years; sometimes voracious, sometimes takes scarcely any food for four days. April 8, 10 P. M. had two discharges from his bowels; had none for four days before. April 9, 10 A. M. left work, visited some friends, talked of religion, was found praying and kneeling in an empty house next one from which a funeral was moving; he was brought home by two friends. I visit him at 7 P. M.; he holds the bible open, talks of religion, seems disposed to be abstracted from surrounding objects; goes to his chamber, apparently to avoid my inquiry; his wife offers him drink, he dashes the vessel to the ground. His irritability seeming aggravated by attempts to soothe, solicit and advise him; he attributing his movements to the 'irresistible orders of the Spirit,' I confine his limbs, to guard against possible mischief, and to administer remedies most advantageously. His frequent spitting, and whitish tongue, seem to indicate a

foul stomach; I give him tartrite of antimony, twenty-five grains, and a quart-glyster of warm water. His fury threatens to exhaust him: the family will attribute it to the treatment; they know not how he would have been without it. He vomits fetid matter thrice in five hours; sleeps half an hour; wakes boisterous; has a fit; is calmer. April 10, 6 A. M. receives a pint-glyster, containing sulphate of soda, 2 oz. 8 A. M. has a discharge from his bowels; consents to take food; begs to have freedom of his limbs; does not abuse it; comes down stairs; his mind is not quite sane. He has two discharges from his bowels; no more delirium, or medical treatment. *See Dic. des Scien. Med. tome 26, p. 251—5.* During his disease his skin was moist and warm, his habit of stuttering was suspended. *See Spurzheim on Insanity, p. 85, 204.* He returned to his work, as a tinman, which he often interrupted by intemperance. In July, fancying his fellow-boarders would kill him, he left home at midnight, in distress; soon after, twice tried to drown himself. His country-friends took him home, and keep him at his trade under their energetic care.

His mother was insane and her two brothers; a third died with disease of his bowels, which confined him eighteen days, during which he was insane; the son of a fourth is insane.

Near Edinburgh is an institution for drunkards, maintained by their own cost or labour, till discipline and industry seem to suspend their vicious propensity. Every community needs such an institution. It may be separate, or a section of a house for insanity, or of a bridewell.

REVIEW.

ARTICLE I.

A Practical Enquiry into the Causes of the frequent failure of the operation of Depression and of the Extraction of the Cataract as usually performed ; with the description of a series of new and improved operations, by the practice of which most of these causes of failure may be avoided. Illustrated by tables of comparative success of the new and old modes of practice. By Sir WILLIAM ADAMS—London, 1817.

THE disease called Cataract, was, for many ages, supposed to consist in an accidental deposit of coagulated substances on the forepart of the crystalline lens. After the nature of the disorder began to be investigated, the affirmative of this opinion was still supported by the observation, that, on the removal of the crystalline lens by accident or design, a complete opacity behind the pupil was occasionally observed. The cause of this appearance does not seem to have been explained by a knowledge of the secondary cataract or opacity of the crystalline capsule, until about the year 1700, when the French surgeon St. Yves, being called upon to remedy the sufferings, arising from a cataract falling into the anterior chamber of the aqueous humour, performed the operation of extraction, and laid the foundation for a practice new in modern times. The ancients were well acquainted with the depression of the cataract, as appears from the very distinct directions for its performance, laid down in the works of Celsus: nor do they appear to have been ignorant of that of extraction, since Pliny evidently alludes to it in the words—"Squamam in oculis emovendam, potius quam extrahendam." Although the operation was both understood and practised at so early a period, it does not seem, in either mode, to have been extensively employed by the ancient surgeons. Probably the form of their instruments, and the mode of employing them, were not well calculated to afford such results as would encourage a frequent resort to these operations. The same reasons

may serve to explain why, that thus being neglected by regular practitioners, they should fall into the hands of empirics, who maintained possession of them on the continent of Europe, and especially in France, until a very late period. For, though Ambrose Paré, and some others, operated successfully, it was not until the time of St. Yves and Petit, cotemporaneous practitioners, that the operation for cataract excited much attention in the medical profession: nor after they had practised extraction, with considerable éclat, was it adopted extensively until forty years subsequent, when it was laid before the French Academy of Surgery, by Daviel, with such illustrations and recommendatory cases of a successful nature, as at once established it firmly in the public estimation. Daviel pretends he was first led to extract the cataract by an accidental occurrence, which he thus relates:—"A hermit of Aiguilles, in Provence, having been operated on for a cataract in the right eye without success, came to Marseilles to request me to operate on the left. I was not more successful than he who had operated before me. Having made use of the common (couching) needle, cutting on both edges, not only was I unable to succeed in depressing the cataract, but it happened that many portions of the broken crystalline passed into the anterior chamber, which I saw fill with blood, so as to obscure every thing; and I was obliged to withdraw the needle without finishing the operation. This accident determined me, after the example of M. Petit, to open the transparent cornea and evacuate the blood and fragments of cataract which had passed into the anterior chamber. This I effected by carrying a half curved needle into this chamber. I enlarged the first opening in the cornea with small curved scissors; and by this means every thing in the anterior chamber was discharged. The pupil appeared fair, and the patient immediately distinguished objects; but as the eye had been long fatigued by the first operation, the second became fruitless, and was followed in two days by a suppuration of the organ."* His process of extraction was complicated by the number of instruments employed. He introduced, first, a needle to puncture the cornea, which, being withdrawn, gave place to another needle, blunt at its extremity, by which this puncture was enlarged; but having become flaccid after this, by the discharge of the aqueous humour, a curved scissors was to be passed between it and the iris to enlarge the incision to something more than the semi-circumference of the cornea; then a little spatula was to be

* *Memoires de l'Académie de Chirurgie*, Tom. 2d. p. 339.

used to raise the flap of the cornea, under which he passed a fine pointed needle to puncture the capsule of the crystalline lens. When the operation of Daviel was laid before the Academy, the multitude of instruments excited criticisms and proposals of improvement. La Faye and Poyet, both proposed to make the incision of the cornea by a single instrument; but the latter previously passed a long needle with thread through the cornea, by which thread the globe of the eye was held up, when the incision of the cornea knife tended to draw it down. Baron de Wenzel, of Germany, soon followed the Parisian operators, and practised extraction with so much success, as to obtain great reputation for this mode of operating, as well as a high degree of fame for his personal dexterity. This he acquired, however, at no trifling expense; since the attainment of the habit of operating adroitly, cost him, as he informs us, the loss of a great number of eyes. If to the names above mentioned, we add those of Wathen, Ware, Roux, and Travers, we have a regular series of skilful and famous surgeons, who have followed the operation of extraction to the present day.

Extraction, as it has been improved by these eminent men, is performed in the following manner:—The patient being prepared for the operation, by means calculated to prevent inflammation, is placed in an upright chair, obliquely to the light, in such a manner, that the reflection from the cornea does not strike the eye of the operator: who then fixes himself in front of his patient, with his face opposite to the eyes of the latter, the operating arm resting on the knee, which is to be raised high enough by supports, to allow the hand to be as high as the eye of the patient. The upper eyelid is supported by the speculum of Pellier, formed of thick silver wire, curved at the extremities; and the lower, by the fore and middle fingers of the surgeon. Instead of the speculum, the fore and middle fingers of the operator, opposed to the fore and middle fingers of an assistant may be fixed on the globe, which is thus kept steady. The operator now resting his hand on the temple of the patient, passes the knife into the cornea, just in front of the sclerotica, about one sixteenth of an inch above the transverse diameter, and, for an instant, inclines the point backward to avoid engaging it too far in the layers of the cornea; but as soon as the cornea is perforated, he, with a steady motion, carries the instrument on from the outer to the inner angle of the eye, in a plane parallel to the plane of the iris, observing if the membrane insinuates itself over the edge of the knife; and if it does, disengaging it by gentle friction on the cornea, lest he should cut through the iris. The knife traverses to

the opposite side of the cornea, and emerges at the inner angle of the eye, until one third part of the blade is seen without the cornea; then, by a slight movement downward, the section of the remainder of the cornea is completed. The knife being removed, the next step is to puncture the capsule, which contains the crystalline lens. This is effected by the cystitome, the point of the cornea-knife, or other minute pointed instrument. The cystitome, a concealed lancet, is passed under the cut flap of the cornea through the pupil to the centre of the opaque lens; the lancet is protruded from its sheath, so as to make a puncture in the capsule of the lens, and is then withdrawn. In executing this, it is important to avoid puncturing the lens at its edge, lest the vitreous humour should be penetrated and escape: it is important also to avoid pressing the instrument so much upon the lens, as to break it from its capsule and sink it in the vitreous humour; an occurrence fatal to the operation and the eye. Next follows the actual removal of the lens. This must be managed with extreme caution, since a very moderate pressure, a spasm of the muscles of the globe, even a sudden motion of the patient, may propel the whole contents of the globe through the extensive opening in its anterior membrane. A slight pressure on the lower part of the cornea with the curette, or a most gentle compression of the globe by the fingers, applied on the upper and lower eyelids, is all of force that is admissible; and this is usually sufficient to push the lens against its capsule, so as to tear open the puncture previously made, and discharge the lens into the anterior chamber, where it presents itself at the orifice of the wound, is seized by the curette and brought out of the eye. The eyelids are carefully closed, and the patient kept tranquil a few minutes; and then they are once more raised to observe if the iris may have fallen into the wound, or if the flap of the cornea may be inverted. In case of the former accident, the operator replaces the prolapsed iris with a probe: and of the latter, the cornea is carefully turned down and the eyelid brought over it, to prevent a recurrence of the same thing. The patient is then removed to bed, and kept perfectly quiet, lest any circumstance should cause the discharge of the vitreous humour.

Although the improved method of extraction had a great success, compared with the former imperfect operations, yet it was at an early period observed, that many weighty objections occurred to it. These prevented its acquiring that reputation in England, and even some parts of the continent of Europe, which it possessed in France and Germany. Among the English,

Pott distinguished himself by a very candid investigation of the matter, and by many practical observations, that have been employed to great profit of late years. He eventually concluded, that the mode by depression was to be preferred to the other. The objections which have been urged against extraction, are principally the following:—First, the incision in the cornea cannot always be effected with the necessary precision; for, from the convexity of this part, the knife penetrates with some difficulty, unless its point is directed a little backward; in doing which there are two dangers, one of wounding the iris, the other of discharging the aqueous humour, when the inclination of the knife is altered. The latter is a common accident, and is attended by the great disadvantage of bringing the iris forward upon the knife, where it will be cut, unless the greatest caution is used. On the other hand, if the point is not at first directed backward, but straight on, in a plane parallel with the iris, the instrument is liable to be engaged so far in the layers of the cornea, as to require its being withdrawn, or otherwise it cuts the inner layer of the cornea so far forward as to endanger the making an incision too small, and bringing the scar too near the centre of the cornea. Further, in bringing the point of the knife through the opposite or concave surface of the cornea, it is apt to pass so near the centre of this membrane, as to leave an opaque scar interfering with the pupil; and this happens, if the operator is apprehensive of wounding the internal angle of the eyelids, and thus startling the patient at the most critical moment. Another objection is founded on the danger of wounding the iris. If the direction of the instrument is not changed, the instant it punctures the cornea, if it is not carried steadily across the anterior chamber parallel to the iris; if the motion of the instrument is interrupted, the aqueous humour will run out, the iris must then press on the knife, and with great difficulty can the operator avoid an accident, wholly inexcusable, that of cutting the iris while in plain view, and irreparably damaging the organ. In the next stage, that of opening the capsule, Mr. Ware and others, represent strongly the danger of puncturing too near the edge of the crystalline, where it is thin, and quickly admits to the vitreous humour, which may then pass through the orifice. In the third stage, in which the lens is removed, there are many things to be guarded against, and some of them may elude the vigilance of the coolest operator. If the pressure intended to expel the lens is great, the lens may not be expelled alone, but in company with the vitreous humour, and then the eye is lost; if the incision in the cornea

is too small, that is, less than nine sixteenths of its circumference, a considerable pressure is required to force the lens through the small opening, and this will be liable to disturb the vitreous humour: so if the patient should move suddenly, if the muscles of the eye strongly contract, if the vitreous humour is in a fluid state, the whole contents of the globe may be thrown out at once, and the eye reduced to an irremediable obscurity. Among the other objections brought against this mode of operating, it is necessary to mention one only, and that of some importance. Whenever the capsule of the crystalline lens is wounded, it is very apt to become opaque. Now, in extraction, there is a wound of this capsule, and more or less laceration. This wound is, in many instances, followed by an opacity of the wounded fragments of the capsule, or else by opacity of that part of the capsule not wounded, which lies behind the lens, between it and the vitreous humour. In either case, a secondary or membranous cataract is formed, and the patient, after his hopes have been strongly excited by the acquisition of some degree of vision, is reduced to a state of blindness, as great as before any operation.

A knowledge of these difficulties led Mr. Pott and Mr. Hey, in England, and Professor Scarpa, in Italy, to prefer the operation of depression, modified by themselves and others. The last named celebrated Professor made a great improvement in the operation, by substituting a short and slender needle for the broad spear-pointed instrument employed before. And while he lessened the dangers of the couching needle, he increased its efficacy, by giving it a curve at the extremity, highly advantageous in the management of the lens. Mr. Hey also diminished the dangers of this operation, by introducing a very short and round pointed needle into use; although it must be allowed, that his needle penetrates the sclerotic coat with some difficulty, and acts with less power on the opaque lens than the instrument of Scarpa.

The object of the operation of depression is the removal of the crystalline lens from its situation behind the iris, and its depression into the bed of the vitreous humour, without the sphere of vision. The couching needle is introduced through the sclerotic coat, near the outer angle of the eye, at the distance of about a line from the edge of the cornea, thence it is pushed cautiously forward between the lens and the iris, until its point is seen in the pupil. Then the point is turned backward upon the lens, if possible, to transfix it; and next, it is propelled backward and downward toward the lower part of the globe; and lastly, the needle being disengaged from the

lens by a slight motion, is withdrawn from the eye. If the needle of Scarpa is employed, it is carried over the superior edge of the crystalline, between it and the ciliary processes, its convexity towards the iris, without touching this membrane. It is then brought down before the cataract, until it is opposed to its central part, and afterwards employed as the other, except that it must be carefully withdrawn in the direction it entered. Caution is required in passing the needle in front of the cataract, not at first to wound the capsule more than is inevitable, since it thus becomes loosened from its situation, and is transfixed with greater difficulty. When the opaque lens is hard, as it usually is in aged patients, this operation is attended with the most agreeable appearances. The opacity being removed, the pupil is clear, the globe of the eye unimpaired, and the patient once more perceives the light. But it cannot be thus successfully employed where the cataract is soft, as it is, in persons not advanced in life. The soft cataract breaks in pieces under the needle, and cannot be depressed. In vain does the operator employ his most strenuous efforts to clear the pupil. As one portion is depressed another appears, until weary with his efforts, he is compelled to leave the eye with as much apparent opacity as before his operation.

The depression, being attended with a sudden restoration of sight when successful, being easily performed and not very painful to the patient, has had a greater number of supporters than any other process. Even at present it is probably employed more extensively than all other modes, although the most distinguished advocates in its favour have gradually disappeared, till scarcely any one is seen to support its general application, but the illustrious veteran, Scarpa. Among the causes which have discredited the depression, the following may be mentioned:—First, the liability of the cataract to rise and return within the sphere of vision. This accident, well known to all practitioners, is not exactly understood by any. Some attribute it to the elasticity of the vitreous humour, which is compressed during the operation, and afterwards reacts and repels the lens to its first situation. Others believe it to proceed from a distortion of the vitreous humour, not accompanied by that rupture of its substance, which is necessary to the admission and secure lodgment of the lens; whence the distorting force is no sooner removed, than the vitreous humour springs to its situation, and with it the crystalline, as their mutual relations have not been broken. Others have urged adhesions to the capsule of the crystalline, and the elas-

tic nature of that capsule as the cause of rising of the cataract. Whatever be the cause, the accident is common enough to form a serious objection to this method in the opinion of most surgeons. Professor Scarpa, however, informs us that it never happens to him. "I do not recollect that any solid cataract, depressed by me, has re-ascended; nor does any one of the numerous pupils recollect such a thing;" and he goes on to show with great truth, that the cataracts which appear to rise at some distance of time after the operation, are, in reality, secondary cataracts, formed by the wounded capsule of the crystalline, which has become opaque from the operation: an occurrence sufficiently common after depression as well as extraction. The reputation of Scarpa stands too high to admit our questioning the exactness of his statement; but he must certainly be allowed to have been more fortunate than others, who have practised his own operation. A second objection to depression is, that the hard cataract, the peculiar object of this operation, when pushed into the vitreous humour, occasionally presses on the retina, and brings on violent inflammation, suppuration, and total loss of the organ. A third objection is, that the patient who has undergone this operation successfully, rarely recovers a perfect or comfortable degree of vision; but continues in a state of semi-obscurity, or labours perpetually under a weak, irritable, painful state of the eye. Mr. Travers, surgeon-oculist of the London Eye Infirmary, has made some excellent observations on the method of depression; but he concludes his remarks by saying, "I have frequently performed this operation, and although my experience does not permit me to doubt that it is sometimes succeeded by useful vision, the same source of observation compels me to remark, that the serious and lasting injury which the organ suffers, where the operation is successfully completed, induces for the most part a slow, but destructive inflammation, characterized by a tumid state of the palpebræ, a phlogosis and serious weeping of the conjunctiva, an immoveable and contracted pupil, muddiness of the humours, discoloration of the sclerotic towards its junction with the cornea, a periodical heavy pain in the region of the orbit, and a distressing sense of weakness in the organ. These symptoms are accompanied and succeeded by a dimness of vision, very imperfectly remedied by glasses. In short, the condition of the eye, after the couching of an entire cataract, is too often that of a stationary imperfect amaurosis, the result of obstructed circulation and partial disorganization of the globe." And afterwards he says, alluding to a particular manner of depres-

sion: "I regard the operation as radically wrong in principle, and shall therefore be excused from a discussion of the merits of this or that mode of performing it."

So many and such material objections to the operations of extraction and depression, naturally inspired practitioners with the desire of discovering some other method, especially when it was found, on a critical inquiry, that scarcely half the number of cases operated in these modes, were followed by satisfactory success. The late Mr. Saunders led the way, in the career of innovation and improvement. While demonstrator, under Mr. Astley Cooper, at St. Thomas' Hospital, his attention was directed to the diseases of the organ of hearing, and afterwards to those of vision. On the formation of the London Eye Infirmary, the plan of which he first suggested, he was appointed surgeon to that Institution; and in 1806 commenced his new practice, which has terminated in the establishment of a third method of curing the cataract, called, by way of distinction from extraction and depression, the *absorbent practice*. Mr. Saunders seems to have taken the idea of his operation from the remarks of Mr. Pott and Professor Scarpa, each of whom had observed and published, that a cataract will be absorbed in its natural situation, if the aqueous humour be admitted to contact with it, through an opening in its capsule. This fact was well illustrated in the case of a boy, observed by Mr. Saunders. The lad accidentally punctured the cornea and crystalline lens with a fine awl. Violent inflammation followed the accident, and, on its subsiding, an opening was seen in the capsule of the crystalline, through which the lens was observed to be opaque, or in the state of cataract. Soon after, this opacity began to disappear, and was at last wholly absorbed, so that the boy recovered the perfect vision of the eye, by the aid of a convex glass, such as is required after the removal of the lens.

It is disputed, whether to Mr. Pott, Professor Scarpa, or to others, belongs the credit of discovering the principle on which the new operation is founded; but it appears that the solvent power of the aqueous humour on the crystalline lens was known long before either of those authors wrote. Pott was probably the first who stated, in a distinct and unquestionable manner, that the cataract would dissolve in its place; and also that he sometimes ventured to push its fragments into the anterior chamber of the aqueous humour, where they underwent a safe and speedy solution. Scarpa proceeded farther than Pott; he actually *recommended*, in certain cases, to push these fragments, for solution, into the anterior chamber. But nei-

ther of these authors established the practice on such grounds, that it was likely to influence the public opinion. Saunders, therefore, is entitled to the merit of discovery ; since, without him, we should not have the absorbent practice of the present day. The hints and insulated facts thrown out by ingenious men, are not to be regarded as discoveries. The world is full of such ; yet they can be of no use until the facts are applied to some system or method, and this is displayed in a convincing manner to the public ; and in this view of the matter, Saunders has as fair a claim to the discovery of the absorbent practice, as Copernicus to that of the planetary system. His process consists in introducing a fine needle into the eye, and opening the capsule of the crystalline, for a small extent, to admit the aqueous humour to contact with the crystalline. He introduced the needle behind the cornea, as in the operation for depression, which he called the posterior operation ; or anteriorly through the cornea, and the pupil, in the manner of Conradi. In either way, the anterior part of the capsule alone was to be opened. The anterior operation he found to be least painful and dangerous ; the posterior most effectual. In both cases the operation is so slight, as scarcely to be perceived by the patient ; and so short, that he is hardly sensible it has commenced, when he is informed it is completed. Hence its very judicious and useful application to children born blind, since they cannot be made the subjects of the other operations. In these cases the operation is peculiarly appropriate, and will probably forever exclude the use of other methods. In its application to adults, it has been found too slow and uncertain, and requiring too many repetitions, to entitle it to rank with other modes of practice. Mr. Saunders studiously concealed his operation from the public, with the intention, as he stated, of ascertaining its merits with greater accuracy, and rendering it more worthy of general confidence. His situation in the Eye Infirmary presented ample opportunities for experience in this, as well as other diseases of the organ of vision ; and he had improved them so well, as to collect many original observations in regard to the pathology of the eye, which he intended to methodize and publish to the world, when death interrupted his short and brilliant career. An indisposition, affecting the brain, had interfered so much with his literary pursuits, that his death would have probably occasioned the loss of many of his valuable remarks, had his manuscripts fallen into other hands than those of an ardent and most intelligent friend. This friend was Dr. Farre, an eminent physician in London, who had been colleague with Mr. Saun-

ders in the Eye Infirmary. Influenced by a disinterested love for the reputation of Mr. Saunders, and the desire to benefit his surviving family, Dr. Farre undertook the task of collecting and arranging his papers, and supplying their deficiencies with his own experience, as far as circumstances could admit; and thus he has saved, for the public and for the reputation of Saunders, a rich collection of pathological and practical remarks. Mr. Adams, now Sir William Adams, had been a fellow student with Mr. Saunders; and at the time the latter was in the London Eye Infirmary, they were on terms so friendly, that Mr. Adams was admitted to be present at the operations for cataract, when they were yet concealed from the public. Mr. Adams went from London to Exeter, proposed there the plan of an Eye Infirmary; succeeded in establishing it, and entered at once to an extensive practice in the ophthalmic art, abandoning for this, his profession as a surgeon. Soon after, he invented the operation since practised with so much success. We know not whether he was led to it by the remarks of Pott and of Scarpa, by the train of reflections suggested by the occasional failure of Saunders' plan, or by accident, as in the cases of St. Yves and Daviel. Had the latter surgeon waited, in the case where he extracted the fragments of broken lens and blood from the anterior chamber, he might have witnessed the absorption of blood and cataract, and anticipated the absorbent practice of Sir William Adams. Whatever it was, that led Adams to his mode of operating, he pursued his practice with ardour, and apparently with much success, since, although he began to operate in 1810 only, he was encouraged to publish his practice in 1812, in a systematical form. This practice is founded on the solvent power of the aqueous humour. Instead of depressing or extracting, or merely puncturing the lens, he cuts it up, and propels its fragments forward into the anterior chamber, there to subject them to the process of solution. Notwithstanding what had been said by Pott, Scarpa and others, the presence of the crystalline lens, or a part of it, in the anterior chamber, was not generally considered a desirable or safe occurrence; he, therefore, who shows it to be safe and desirable and practicable, has a title to be called discoverer of a new process. Adams has done this; at least in the opinion of a great number of ophthalmic practitioners; and among those who do not approve his mode, there are probably few, who would feel the reluctance they formerly did, at leaving fragments of a soft crystalline lens in the anterior chamber, or who would even hesitate to throw them there, in an operation for depression, provided the cir-

circumstances invited it. The operation for solid cataract (not hard) in children and adults is thus described:—

“In the earlier periods of my practice, I performed one operation and used one instrument: but experience soon taught me that the degrees of hardness, as well as the different species of cataract, vary so considerably, that it was necessary to use different instruments, and adopt different modes of operating. The various operations I am now about to describe, are equally as applicable to persons in middle age, or in advanced life, as to children or young persons, provided the cataracts are of the same consistency and species. I shall begin with the operation for a solid cataract, or when the disease consists of opaque capsule, and some remaining portions of unabsorbed lens, which frequently occurs in congenital cases. The pupil being dilated from the application of the extract, or a strong solution of the belladonna, within the eye-lids, about an hour previous to the operation, the patient, when the right eye is to be operated on, must be placed on his back, on a table, with his head raised on a pillow, and the light falling on the eye, over the nose. The operator sits behind, holding the speculum in his left hand. On the contrary, when the left eye is to be subjected to the operation, the patient must be placed on a chair of a convenient height, while the operator sits before him, and the speculum is held by an assistant, who stands behind and supports the head. This description applies to adults: but if a child is the subject of operation, three assistants will be necessary; one to secure the head, another the feet and knees, and a third to make pressure on the chest, and also to pull down the lower eyelid. If the right eye is to be operated on, the little patient should be laid on the table, and secured as has been just described: but when the left eye is the subject of surgical treatment, if too young to sit up in a chair, he should be laid on a narrow table, his legs hanging over its edge, and his head held on a pillow by an assistant. The surgeon sits before him, and fixing the eye with the speculum in his left hand, he has, in this case also, the great advantage of operating with his right, while he is enabled in both to direct the eye-ball as he pleases. This variation of position appears to me highly advantageous; as few, if any, can possess the power of using both hands with equal dexterity. Having secured the eye by a gentle pressure with the concave speculum, introduced under the upper eyelid, I enter the two-edged needle through the sclerotic coat, about a line behind the iris, with the flat surface parallel to that membrane, I then carry it cautiously through the posterior chamber, without, in the slightest degree, interfering with the cataract or its capsule, till the point reaches the temporal margin of the pupil; when I direct it into the anterior chamber, and carry it on to the nasal margin of the pupil, in the line of the transverse diameter of the crystalline lens. I then turn the edge backwards, and with one stroke of the instrument cut both capsule and cataract.

in halves. By repeated cuts in different directions, I afterwards divide the opaque lens and its capsule in many pieces, and at the same time take particular care to detach as much of the latter as possible from its ciliary connexion. As soon as this is accomplished, I turn the instrument in the same direction as when it entered the eye, and with its flat surface bring forward as many of the fragments as is in my power, into the anterior chamber, by which means I frequently leave the upper part of the pupil perfectly free of opacity. By cutting in pieces the capsule and lens at the same time, not only is capsular cataract generally prevented, but the capsule is also much more easily divided into minute portions, than when its contents have been previously removed. The central division of the capsule and cataract prevents the liability of their becoming too soon detached from the ciliary processes and revolving on the needle, or slipping undivided into the anterior chamber. In cases of large and solid cataract, this is very essential to the perfect execution of the operation, as the natural connexion of the capsule with the ciliary processes assists, in conjunction with the vitreous humour, to afford a sufficient counter-resistance to admit of its nucleus being completely divided, which, were that connexion detached, could not be effected but by repeated operations. This plan is of peculiar advantage in those cases of cataract termed *ELASTIC*, where, from the great thickening of the capsule, it is almost impossible, by any of the usual operations, at once to make an opening sufficiently large to admit the escape of its contents, as, by the degree of the pressure downwards, necessary to effect this, the opaque body becomes depressed below the axis of vision; but the moment the pressure of the instrument is withdrawn, it again rises to its natural situation, as if touched by a spring. In all cases, when the fragments of the opaque crystalline are placed in the anterior chamber, their solution and absorption are much more rapid, and less irritation is produced than when they are suffered to remain behind the iris; which was Mr. Saunders' practice, before he adopted the anterior operation of Conradi, and the one I myself formerly pursued. When the anterior chamber is large, I now gently push the divided cataract through the pupil at the first operation, in which situation it becomes dissolved in about a month or five weeks; and an extensive experience has convinced me, that this practice will be always attended with success, when the cataract admits of its nucleus being cut in pieces."

His operations for fluid cataract, for capsular and adherent capsular, present nothing very worthy of notice, except that in the latter, that is, in the operation for adherent capsular cataract, when the lens is absorbed and the capsule adheres to the iris, he, and his antagonist, Professor Scarpa, appear to change sides; for Mr. Adams recommends to separate, by the fine needle, this adherent capsule from the iris, except at one point, to preserve it from floating; and then to depress it in

the vitreous humour, where, if we believe Sir William Adams, we shall have no more trouble from it. Scarpa, on the other side, abandons his usual and favourite operation of depression in this case, and advises to separate the opaque capsule from the iris, to break in pieces and cast it through the pupil into the anterior chamber: and he adopts this mode of treating it, because, if depressed, it will infallibly rise again. "I am satisfied by experience," says he, "that all efforts (to depress the capsule) would be useless; for scarcely is the needle withdrawn, when we perceive all those membranous fragments, conducted as if by a current, to approach the pupil anew."* The case is in truth a bad one; so that we are not to be surprised, that the practice of eminent men should be unsettled in regard to it. The best operation for capsular and adherent capsular cataract, is that of Mr. Gibson of Manchester. It consists in making a small puncture in the cornea, then, by a minute scissors, the adhesions of the capsule to the iris are divided, and the fragments removed by small forceps, a hook or scoop. This plan is to be highly commended for the tough unadherent capsule, to which it is undoubtedly more applicable, than either of the other modes are.

The operation for solid cataract was at first applied, with modifications, to all cases, as well of solid cataracts of a HARD texture, such as are common to the aged, as to solid cataracts of a SOFT consistence, such as are found in young adults. As it would be dangerous to throw any hard substance into the anterior chamber, lest its pressure on the iris and inner membrane of the cornea, or membrane of the aqueous humour, might occasion inflammation, Adams adapted his operation to this kind of cataract, by cutting, or to use his term, slicing off, as much as possible, of the opaque crystalline and its capsule, taking care not to displace the lens; then the sliced fragments being thrown into the anterior chamber, the hard nucleus is left in its place to be softened by the action of the aqueous humour, until it can be cut up by a second operation, and pushed into the anterior chamber. Subsequently it appeared, that the hard nucleus dissolved with extreme slowness; and very possibly, also, the objection of Professor Scarpa proved well founded, that this nucleus would irritate the iris and bring on a dangerous inflammation. In his second work, Sir William Adams abandons his first operation for hard cataract, and recommends to extract it, though by a quite different process from the common one; and of this new process he claims to be considered the inventor. Mr. Travers, however, has published a description of an operation, originated

* Scarpa, Tom. 2nd. p. 105., traduction de Lèveillé.

by himself, which is nearly the same as that of Sir William Adams, especially in the most peculiar part, that of pushing the cataract into the anterior chamber, as a preliminary step. In other respects, the new mode of extraction, as practised by him, very much resembles the old mode of Daviel. The eye is prepared over night by a weak solution of belladonna. The patient being placed as usual, and the operator before him, a most delicate cutting needle is introduced, a line behind the cornea, through the sclerotica and carried between the lens and the iris without disturbing the former, until it appears in the pupil, across which it is carried toward the inner edge of the pupil. Then, the edge of the needle is turned backward upon the lens, and an attempt made to divide it. If the lens is hard, the needle will not penetrate; and then the needle is to be a little withdrawn, and the point of it carried below the central part of the cataract; a slight pressure is made on the lower edge of the opaque lens, by which its upper edge is tilted forward, and the lens can be readily carried through the pupil into the anterior chamber, its posterior part being opposed to the inner surface of the cornea. When this is effected, the capsule is entirely cut up by the point of the needle, lest, by its becoming opaque afterwards, a secondary cataract should be formed. The author remarks, however, that, in the greater number of instances, the proper capsule of the crystalline will pass into the anterior chamber with the cataract; and that, in this case, the membrane divided by the point of the needle will be the membrane of the vitreous humour, which lines the cavity from which the lens has been dislodged. If this be true, the author's direction to cut up the membrane through the whole extent of the pupil cannot be considered safe, since the vitreous humour would thus lose all support; and what is to prevent its being discharged from the eye, after the cornea is opened and the lens removed?

This first step of the operation being completed, the posture of the patient is changed, and he is now placed on the back, with the head a little elevated. A small opening is then made with a knife, at the outer edge of the cornea. This opening is afterwards enlarged by a different instrument, probably to prevent the necessity of thrusting the knife so far into the eye, as to endanger the iris. The instrument employed for this purpose is a small curved knife, round at its extremity; and with this, the opening is to be enlarged upward and downward, though not to so great an extent as in the common operation of extraction. Next, a small hook is introduced with its flat part parallel to the iris between that membrane and the cataract. The curved point of the hook is directed into the lens opposite

the pupil, and the cataract is drawn out of the eye. If fragments of the lens are broken off, they are not to be very sedulously removed, since they will dissolve in the aqueous humour. The principal advantages of this process over the common one of extraction are, first, that the lens is pushed into the anterior chamber before the cornea is opened, and thus the compression usually employed to expel the cataract is unnecessary, and the danger of protruding the vitreous humour is avoided. Second, the opening of the cornea is comparatively small; and hence the hazard of cutting the iris, and that of dividing the cornea irregularly, and that of protrusion of the iris and of inflammation of the cornea, are diminished or wholly avoided. Third, the removal of the lens by a hook assists in rendering all pressure on the eye unnecessary.

Another operation, frequently connected with cataract, for which Sir William Adams lays great claims on the public estimation, is, that of making an artificial pupil in cases of partially opaque cornea, and of closure of the natural opening in the iris. This closure of the pupil happens from two causes, an opening in the cornea and an inflammation of the iris. In case of wound or ulceration in the cornea, by which an opening is made through this membrane, the iris is liable to prolapse or push through the opening to a greater or less extent, forming a little tumour or hernia on the outside of the globe of the eye. When this happens, the pupil is drawn to one side, distorted, usually diminished in size, and sometimes closed. The other cause of closure of the pupil is inflammation of the iris, perhaps venereal or scrophulous. In consequence of this inflammation, layers of coagulated lymph are deposited on the back part of the iris, which cement that membrane to the capsule of the crystalline lens, and cause an opacity of the lens. At the same time, the delicate circular fibres of the iris, being irritated by the inflammatory process, gradually contract; the pupil closes, and the organ is thrown into darkness. Cheselden invented an operation for the cure of this deplorable state of the eye, by forming something like an artificial pupil. This was done by passing a needle, cutting on one side through the sclerotica, in the place where the couching needle is introduced. The instrument is pushed through the iris, which is then to be cut backward to a sufficient extent to admit the rays of light to pass through. This operation, though sometimes successful, most commonly failed from the disposition of the circular fibres of the iris to contract anew; and after some time it was found to be successful in so very few instances, as quite to discourage all attempts for an artificial pupil. Scarpa endeavoured to

find a substitute for the plan of Cheselden, in an operation singular and ingenious, but rude and dangerous to the eye. He advised to pass a needle through the iris, and, by the application of slight force, to separate the iris from its attachment to the ciliary ligament at its greater circumference, so that the pupil, instead of being through the iris, was over its exterior edge. Even this unnatural orifice sometimes was found to serve the purpose of a pupil; but more commonly it failed to do so, either from re-closure of the opening, or from the inflammation brought on by violence inflicted on the iris. Wenzel the elder, the baron, so famous for extracting the cataract, proposed a mode of forming an artificial pupil, which he thought would be followed with more permanent advantages than that of Cheselden. He introduced a knife through the cornea, so as to make a considerable section of that part, and afterwards made a correspondent opening in the iris; then seized the iris by forceps, and cut off a small portion of the membrane. Notwithstanding there were various modes of effecting this object, the English surgeons do not seem to have had much confidence in any of them, nor to have been fond of recommending the artificial pupil. At last the subject was investigated anew by Demours, in France, Maunoir, in Geneva, and Gibson and Adams, in England. Professor Maunoir, a distinguished surgeon of Geneva, has advised a much more delicate mode of treating the iris than his predecessors. He makes a small wound in the cornea, introduces a pair of scissors made with one blade pointed, the other blunt or olive-shaped; the pointed blade is pushed through the iris to a sufficient extent, and the scissors then closed so as to cut the crystalline lens, its capsule and the iris. Another incision is then made at an angle with the first. Mr. Gibson, late a distinguished surgeon of Manchester, proposed a different process. He made a small wound in the cornea, and produced a hernia of the iris; for if the membrane did not protrude spontaneously, he drew it out with a hook, and, cutting off the protruding part, he thus effected a very considerable opening in the iris. Where the iris was confined by adhesions, he adopted the process of Wenzel, to which he was sometimes able to add the division of the adhesions to the cornea. Notwithstanding what has been said of the ability of the iris to support very severe usage, it is probable that most of those, who have been in the habit of operating on the eye, are well satisfied that this delicate, irritable little membrane, is very liable to be inflamed when wounded, and hence to contract the orifice anew; and when it is frequently hooked, twisted and pinched,

to fall into a state of chronic inflammation, which keeps the eye weak and uneasy, and sometimes terminates in suppuration and loss of the organ. *Therefore*, it would be highly desirable to discover the operative plan in which it should be exposed to the slighted injury. Such an operation was that of Cheselden; but it was not successful. Such an operation has also been recommended by Sir William Adams; and this, he states, has been attended with happy results. He employs a procedure so much like that of Cheselden, as to have been considered a revival of the old operation. Sir William Adams denies the similarity of the two. Instead of the needle used by the former surgeon, he employs an instrument, of a peculiar and delicate construction, somewhat broader than a couching needle, and formed exactly like a dissecting scalpel. This iris scalpel, is pushed through the sclerotica, at the usual distance behind the iris, its cutting edge being directed backwards. The point is next brought through the iris, at somewhat less than a line from its temporal margin, and carried in front of it, across the anterior chamber until it nearly reaches the nasal margin. Then it is almost drawn out of the eye with a gentle pressure of the curved part of the cutting edge backward against the iris, in a line with its transverse diameter. If the iris does not appear to be sufficiently cut by this manœuvre, the instrument is pushed in again, and the incision repeated, until the aperture is of a size, equal to two-thirds the breadth of the iris. When the disorder is complicated, as frequently happens, with an opacity of the capsule of the crystalline lens, or of the body of the lens, these parts are to be cut in pieces; some of these pieces are brought into the anterior chamber, while others are left as a plug in the newly formed opening of the iris, to prevent its circular fibres from contracting, and forming an union by the first intention. By the time these fragments are dissolved, the iris has lost the disposition to contract, and the pupil remains permanently open.

When this operation was first proposed, Professor Scarpa, who does not well accord with Sir William Adams in all points of ophthalmic practice, charged the latter with copying the operation of Cheselden, and attributed his superior success to his having operated in cases, which admitted of his enlarging the natural pupil. Since that time, the ingenious and candid Professor has appeared to be satisfied, that Adams' method differs from that of Cheselden in various respects: in the form of the instrument employed; in the manner of introducing it with the edge backward, so as not to allow the escape of the vitreous or aqueous humour, and the consequent flaccidity of

the iris; in the delicate mode of the section of the iris, so as to prevent its being separated from the ciliary ligament; and in the re-union of its divided fibres being prevented, by the plug of cataract interposed; and finally, by the success which has followed his practice. Still, however, he finds many objections to this process; he praises that of Maunoir, and appears to relinquish his own operation of lacerating the ciliary ligament. The experience of observing and impartial operators is to decide, hereafter, which of these modes is to be preferred; that of Maunoir, of Gibson, or of Adams. At present, the exclusive adoption of either is not to be considered necessary or judicious. That of Maunoir would be proper, where the space between the iris and cornea is not sufficient to admit the passage of an iris scalpel. That of Gibson must be resorted to, where there are extensive opacities of the cornea, which leave but a small portion of it transparent, and, of course, small chance of success from a transverse or triangular section. That of Adams, inflicting least violence on the eye, is proper to be employed in all cases, where no peculiar difficulties call for the application of methods, adapted to their peculiarities. The iris scalpel of Adams might, perhaps, be improved by shortening the flat part of the knife, and giving proportionate increase of length to the round part of the blade connected with the handle: at the same time regulating the size of this rounded part, so that it should exactly fill the orifice made by the incision of the knife in the sclerotic coat. By this means, we should prevent the escape of portions of the aqueous and vitreous humour, and the consequent inconveniences during those manœuvres, in which the blade is accidentally turned from its transverse course; also during the movements of the instrument, which are indispensable in compelling the fragments of a divided cataract to enter the anterior chamber. It would besides afford a much better support for the instrument in the incisions of the iris: since, when these are performed, the knife is supported by the sclerotic coat, which must be more pained and hurt by the pressure of the blunt edge of a flat instrument, than by one of a smooth, rounded shape.

The Egyptian or purulent ophthalmia, imported into England, attracting the notice of Sir William Adams, he made efforts to arrest it in the earliest stage, and, as he informs us, met with satisfactory results. The second stage of the disease, in which the cornea is opaque and the patient consequently blind, presented a vast number of subjects in Great Britain, principally soldiers, who had been in Egypt, or others who had taken the disease from them. These were generally set down

as permanently and incurably blind, and placed on the list of invalid pensioners. Sir William Adams attempted an operation for their relief. This consisted in cutting off the granulations, which form within the tarsal cartilage of the eyelid, and thus removing the cause of the friction, which keeps up opacity of the cornea. This operation has restored sight to so great a number of soldiers, who had been considered incurable, that the British government has thought proper to erect an extensive Institution for the relief of sufferers with this disorder. Whether the relief is procured merely by the excision of the granulations, or also by the division and removal of vessels connected with them, which pass on to the cornea, seems doubtful; especially when we consider the great benefit which results from the excision of those vessels in common opacities, provided it be properly executed and sufficiently repeated.

The merit of invention in this case, as in most of the operations of Sir William Adams, has been denied. It appears, in fact, that Mr. Saunders proposed and executed such an operation in two instances, though he did it with scissors, while Adams employed a knife. Whether Mr. Saunders would have pursued this operation and introduced it into practice, appears uncertain, so that the public must consider themselves as indebted to Sir William Adams for its actual use. In the early stage also of this ophthalmia, his remedy is one employed by Saunders, but in a different way. The latter bestows high commendations on the use of nauseating doses of emetic substances in the course of common ophthalmia; but Adams advises the most powerful emetic operation on the invasion of the disease.

In regard to the practical utility of the improvements suggested by Sir William Adams, we shall confine our remarks to the operation for common, and that for hard cataract. The most peculiar of these is the operation for throwing a divided cataract into the anterior chamber of the aqueous humour, to be dissolved and absorbed. This process is applicable to a large proportion of cases of cataract, since the principal ones in which it does not apply, are the hard and the capsular cataracts. It is an operation performed without difficulty, by a delicate and practised hand. It is not painful to the patient, nor of long duration, since we have seen the operation concluded before the patient knew it had commenced. It is less dangerous to the eye than extraction, and more effectual than depression. It is not attended with severe inflammation in so large a proportion of cases as either of those operations; and

moreover, the inflammation is more manageable than that which occurs after depression.*

There is an objection to this method, not to be passed over in silence. Its results are not so immediately satisfactory, as those either of depression or extraction; for the patient does not at once recover the power of vision, nor even an increased perception of light. He must wait patiently for some weeks before he can know, whether his cataract is to dissolve safely, and his sight to be restored. On the whole, however, this must be considered a beautiful operation, and a fine acquisition to the surgical art.

The same remark cannot be applied exactly to the operation for hard cataract; for this latter has no great pretensions to be considered extraordinary for its neatness or elegance. It has, however, the advantage of being a more secure and more easy operation than the common mode of extraction; and as it is resorted to only in cases, where the absorbing practice cannot be, and the depressing should not be applied, that is, in cases of hard cataract, it must be set down for an important improvement. The principal advantages over the common way of extraction, are, that the lens is placed in the anterior part of the eye before the organ is cut open, and thus the danger of expelling the vitreous humour by that manœuvre is avoided; that a much smaller section of the cornea is required, and thus the hazard of discharging the vitreous humour is materially lessened, as well as that of producing inflammation and of opacity of the cornea. This operation, complicated as it is, will therefore appear awkward to those only who are so fastidious as to prize the honour of the art, or of their manual dexterity, more than the safety of their patient. To whom the merit of making it public belongs, whether to Mr. Travers or Sir William Adams, we confess ourselves at a loss to determine.

We naturally inquire, whether the success of these operations has equalled or exceeded that of the other methods. In

* A copious bleeding with warm fomentations, and afterwards brisk purgatives, commonly remove it at the first onset; if it proves obstinate, we resort to the repetition of these remedies, aided by local blood-letting, occasionally to the use of emetics, and in protracted cases, of calomel. Where the pressure of the fragments of cataract on the iris or cornea are sources of irritation to these parts, we keep the pupil dilated by applications, external or internal. It occasionally happens, that the external application of belladonna irritates the inflamed eye more than is safe, and then we must have recourse to its internal use. If the organ is not thus relieved, we make an opening in the cornea, and remove the fragments of irritating substance.

France, it seems, that out of the patients operated on by extraction, taking them at various times, and from the practice of various surgeons, about half the number acquire a tolerable degree of vision. In some reports of cases operated on by depression, the proportion has appeared to be greater. In twenty-four eyes submitted to the extraction in Greenwich Hospital, before Sir William Adams went there, twelve eyes were destroyed: eleven of the remainder were materially injured, and *one* was successful. He employed his operations on thirty-one eyes, some of which had been already under the hands of other surgeons. Of the thirty-one, he informs us, that one only was unsuccessful as to the operation, one was dismissed for irregularity, and twenty-nine were successful. Such a degree of success would scarcely be credible, were it not attested by the signatures of the physician, surgeon, and apothecary of Greenwich Hospital, and published under the eyes of many noble and honourable governors of the institution. In the Exeter Infirmary he operated on forty persons successively, without experiencing a failure: and cured there, in his first year, twenty-five patients; in the second, fifty-five. After his arrival in London, his reputation procured him an extensive practice; he received the honour of knighthood, and has since experienced many proofs of confidence from the British government.

M. Roux, of Paris, one of the most famous surgeons of the present day, made a journey to London, two or three years since, with a view to compare the state of surgery in England with that in his own country. He afterwards published "his journey to London," in which, among other discussions, he introduces the state of ophthalmic surgery. He speaks with little ceremony of the abilities of Mr. Lawrence and Mr. Travers of the Eye Infirmary; and criticises Sir William Adams' operations for Ectropium and artificial pupil. But what seems most to have displeased M. Roux, was the disposition he observed in England, to encourage oculists, rather than surgeons, in the treatment of diseases of the eyes; and he congratulates himself, that in his own country the whole practice in that art is falling into the hands of the professor of general surgery. It would be harsh to accuse M. Roux of selfishness; but it must be considered extraordinary, that while the advantages of a division of labour are better understood and more generally allowed at the present, than at any former time, it should be thought necessary to break down the distinction between the oculist, whose attention is confined to the most delicate operations, and the surgeon, whose skill is divided

between all the parts of the human body. What but prejudice would lead him to compare the itinerant oculists, who formerly flourished in France, with the regular and well instructed surgeons who devote themselves to this practice in the British territories? Surely there is no art, in which the dexterity of incessant habit is so necessary, as in the operations on this sensible, moveable, irritable organ. Sir William Adams tells us, he was informed by the famous instrument-makers, Messrs. Savigny, that they employed one man exclusively for setting surgical instruments; and that the early part of the day was the only time proper for setting the fine instruments used in operations on the eye: for if he attempted it afterwards, his hand was found spoiled by the grosser instruments on which he had worked.

It was our intention to have connected with these remarks, some account of the fine improvements regarding the pathology of the eye, which have been made in Great Britain of late years; but to have done justice to the labours of Saunders, Wardrop, and Travers, in England, as well as to the indefatigable and illustrious Scarpa and others, on the continent, must have occupied more room than would in this place be convenient; and required more patience from our readers, than they might feel disposed to bestow.

ARTICLE II.

On Diagnosis. In four parts. Part I. The phænomena of health and disease. Part II. The diagnosis of the diseases of adults. Part III. The diagnosis of local diseases. Part IV. The diagnosis of the diseases of children. By MARSHALL HALL, M. D. formerly Senior President of the Royal Medical Society, and Physician's Assistant, Royal Infirmary, Edinburgh. London: Longman & Co. 1817.

IN pursuing the study of medicine, we have to take up the subjects it presents in different points of view. If the beginner engages himself in what many call, exclusively, practical inquiries, that is, in observing the effects of remedies, he will find very soon the necessity of first learning to distinguish diseases. This must be done before the value of remedies can be estimated. All, who profess to go through a regular education, learn something of the importance of anatomy and

physiology, as laying a foundation for a knowledge of medicine; they learn, too, the importance of acquiring some general principles in respect to disease, and of becoming acquainted with the general features and history of particular diseases. But there are very few, who realize, even after being instructed by their ignorance in actual practice, how much study it requires to become acquainted with the language of symptoms. This is a study, which does indeed force itself upon every physician, who seeks to do his duty; but its extent, its difficulties, and the true mode of overcoming these difficulties, are commonly unknown to the beginner, and are not realized by many, until they feel too old to learn. Hence we find the physician, who began an enthusiast in respect to his science, becoming a sceptic in later life, and attributing more uncertainty to our art, than truly belongs to it.

The study of the value of symptoms, and the study of diagnosis, which are nearly allied to each other, may be aided by a careful examination of well-known writings; among which, some of the best that occur to our minds are Sydenham's works, Morgagni on the seats and causes of diseases, Baillie's morbid anatomy, Cullen's elements of the practice of medicine, and Heberden's Commentaries. But there are not any English writers, that we know of, who have treated these subjects distinctly and fully, although, among their monographs especially, we find many invaluable materials for so doing. Dr. Berkenhout, indeed, in his *Symptomatology*, has made a beginning, and has given us what Hippocrates and a few others have said about particular symptoms. A more comprehensive work on the plan adopted by Berkenhout would be of inestimable value.

On the continent of Europe more has been done on these subjects than in Great Britain. To say nothing of Sauvage's work on nosology, in which great attention is paid to these subjects, there are two books, that have come under our notice, which it may be useful to name. One is entitled "*Séméiotique, ou traité des signes des maladies, par A. J. Landré-Beauvais*;" the other "*Traité du diagnostic médical, &c., ouvrage traduit de l'allemand du docteur Dreyssig, par Léop. Jos. Renaudin*."

The first of these is certainly a valuable work; but it has relation more to prognosis, than to diagnosis. The last is worthy of great commendation; it is a book to which we have often referred with great pleasure, and we have been surprised not to see it more noticed among the English.

Dr. Hall does not seem to be indebted to those we have mentioned, nor to any similar continental works. His may be

called an original production. Not that the matter, which it contains, is altogether new; nor that the author has failed to avail himself of the instructions of others. On the contrary, he often refers to and sometimes quotes other authors. Yet his book is not a compilation, but presents chiefly the result of his own observations, whether these do, or do not accord, with the observations of others. It is less comprehensive, perhaps, than Dreyssig's treatise, but it is more to be relied on for accuracy. Dr. Hall offers it however as a first edition, and justly entertains the hope to render it more perfect at a future day.

The divisions of this work will be seen in the title at the head of this article. The two first parts are already published. The first, on the phenomena of health and diseases, consists of "preliminary observations," and of nine sections. The first of these sections relates to the countenance; the second to the tongue, &c.; the third to the attitude; the fourth to the external surface; the fifth to the functions of the head; the sixth to the functions of the thorax; the seventh to the functions of the alimentary canal; the eighth to the functions of the urinary and uterine systems; and the ninth to the external form. In respect to each of these subjects, the author first states the phenomena of health at different ages, and then the phenomena in some of the most common diseases arranged in proper subdivisions. As a specimen of the manner in which the work is executed, we give the following extract, taken from the third section, which relates to attitude:—

OF THE ATTITUDE IN DISEASES OF THE ABDOMEN.

"In the Acute Affections of the Abdomen the Attitude demands particular attention, as affording much assistance in the Diagnosis:—

"1. In Inflammation in the Abdomen, a certain position of the body is chosen, and all muscular exertion, motion, or change of position, is cautiously avoided. The patient lies on the back with the thighs raised; or he is supported in a somewhat elevated posture by means of pillows placed under the head and shoulders; or he lies on the side, with the chest and thighs in a state of gentle flexion on the abdomen. The hands, and perhaps the bed-clothes, are carefully removed from pressing on the abdomen, when the complaint is severe. The manner of the patient is soft and cautious. Every muscular effort is suppressed. The arm is often put out, and the knees raised or depressed, with the utmost caution. Any cough is repressed. The voice is low and plaintive, and the expressions short. The patient moans, in a low and plaintive tone, and does not complain loudly even when in acute suffering.

"2. In Spasm of the Stomach, or in Colic, the reverse of this state of general Attitude is observed. The patient usually writhes to and fro, and constantly changes his position or mode of lying, instead of observing the cautious stillness of Inflammation. He often lies on the abdomen, or in the supine position, pressing violently on the bowels, or even grasping a portion of the abdominal parietes with the hands; or he sits in bed, bending forcibly forwards on the thighs. The patient cries out during the paroxysm of pain, and speaks in a loud and irritated tone of voice. All this violence both in general manner and posture, forms in every respect a contrast with the state of attitude in Inflammation.

"3. After a paroxysm of pain in Colic, the patient resumes an easy position; in the absence of an aggravation of pain in Inflammation, the same cautious posture and manner are still observed as before.

"4. The transition from Spasm or Colic into Inflammation, will be easily traced by cautiously observing the characters of these different affections.

"5. The termination of inflammation in Gangrene, is marked by the fallen and supine position; there is extreme debility; the patient lies extended on the back without the flexion and precaution previously observed in the stage of Inflammation. The manner of the patient still remains soft and plaintive.

"6. In strangulated HERNIA the posture is at first attended with writhing, but soon becomes the same as in inflammation, especially with the precaution of flexing the thighs on the abdomen.

"The rationale of the postures in Spasmodic and Inflammatory Affections of the Abdomen is exceedingly easy. In the former the position is such as to imply pressure on the abdomen, and a constant change in the manner of its application; for from pressure in general, and from its being changed in particular, ease, of a temporary kind at least, is obtained. In Inflammation, on the contrary, the aggravation of pain by each movement or muscular effort, causes all change in position, or contraction of the muscles, to be repressed and cautiously avoided. In gangrene the sensibility being destroyed, the posture becomes that of debility.

"7. In Inflammatory Disease of the Kidney, the patient, when up, inclines somewhat to the side affected and a little forward, especially in walking, and in a painful state of the affection, he walks with unusual precaution.

"8. In Inflammatory Disease of the Bladder, the patient bends forwards on the pelvis, evidently with the view of giving protection and relief to the parts contained in it, and of using as little as possible those muscles whose action might give pain. He walks cautiously, and often bends forwards still more, during this action of the muscles.

“9. Retention of Urine, as a symptom in acute diseases, is often denoted by a state of constant elevation of the knees, which is inexplicable until this cause is discovered.”

It will readily be seen how general remarks of this kind must instruct the young practitioner, and even aid the old one, in distinguishing diseases most nearly resembling each other. It will be understood that the same disease is referred to in each section, so far as is requisite. This first part of Dr. Hall's book occupies about one hundred and fifty pages. We highly approve this plan of describing symptoms, and leading the practitioner to an acquaintance with those elements, from which he is daily to deduce his opinions at the bed-side of the sick. We can only lament, for we certainly ought not to find fault, that the author has not done more in this part. A full list of symptoms, with a reference under each, to the diseases in which it occurs, would be one of the most valuable books of reference, which could be presented to the profession. We are however aware, that it must be by the successive labours of many men, that such a work could be perfected. But when perfected, it might be made an index to all the works which relate to diagnosis and prognosis, including even the scattered cases in periodical publications. No man appears to us better fitted for such a labour than Dr. Hall.

The second part of this work is more than double the size of the first. It is also divided into nine sections. These are on the following subjects, viz.: 1st, the fevers and febriform affections; 2d, the febrile cutaneous diseases; 3d, the disorders of the digestive organs and the nervous affections; 4th, the diseases of the head; 5th, the diseases of the thorax; 6th, the diseases of the abdomen; 7th, the diseases of the lumbar and hypogastric regions; 8th, the tumours of the abdomen; 9th, the painful, paralytic, and spasmodic diseases. In an appendix is given “an enumeration of the cases of suspended animation and sudden death.” After this are tables of diagnosis; and last, an index of diseases. The following table shows the contents of the first section, and will enable our readers to understand the plan of this part of the work:—

§ I. THE DIAGNOSIS OF FEVERS AND FEBRIFORM AFFECTIONS.

I. *Of Continued Fevers.*

I. THE FEBRIS BREVIS.

Of a complication of the Febris Brevis, and of a case with which it is liable to be confounded.

II. THE FEBRIS ACUTA.

III. Acute Symptomatic Fever.

Of the complications of the Febris Acuta, and of the affections with which they are liable to be confounded.

IV. THE FEBRIS LENTA.

V. Chronic Symptomatic Fever.

Of the complications of the Febris Lenta, and of the affections with which they are apt to be confounded.

VI. FEBRIS MALIGNA MITIOR.

VII. FEBRIS MALIGNA GRAVIOR.

VIII. Low Symptomatic Fever.

Of the complications of the Febris Maligna, and of the affections for which they are liable to be mistaken.

II. *Of Certain Febriform Affections.*

I. THE ERETHISMUS MERCURIALIS.

II. THE DELIRIUM TREMENS.

III. THE STATE OF INTOXICATION.

IV. THE MANIACAL PAROXYSM.

III. *Of Intermittent Fevers.*

I. Of the different Stages of Intermittent Fever.

II. Of the different Forms of Intermittent Fever:—

I. THE QUARTAN.

II. THE TERTIAN.

III. THE QUOTIDIAN.

IV. THE REMITTENT OR CONTINUED.

Of certain Topical Affections, which assume the Intermittent or Remittent character.

Each of the diseases here mentioned is described by its most characteristic symptoms, and is distinguished from the other diseases enumerated in the table above, and from other affections, with which it is liable to be confounded.

The whole of this book shows great ability, much nice discrimination and laborious attention in the author. There is evinced in all parts of it a sincere love of truth, which inspires respect and confidence. The “tables of diagnosis” are most especially valuable, and must aid very much in rendering the book what it ought to be, a manual for physicians. There are eight of these tables, and each table is divided into numerous

columns. In the first column are placed the names of diseases which most closely resemble each other, and in the other columns are found the symptoms, which belong to each disease. These columns for symptoms are arranged in a very good method.

ARTICLE III.

On the Mimoses ; or a descriptive, diagnostic, and practical Essay, on the affections usually denominated Dyspeptic, Hypochondriac, Bilious, Nervous, Chlorotic, Hysteric, Spasmodic, etc. By MARSHALL HALL, M. D. Author of a Treatise on Diagnosis ; formerly Senior President of the Royal Medical Society, and Physician's Assistant in the Royal Infirmary, Edinburgh.

Τοιςι δε πλειστοις των τούτων φαινομένων, ουχ 'ΕΝ ΤΙ ΤΩΝ ΤΟΥΤΩΝ ΚΑΚΩΝ ΦΑΙΝΕΤΑΙ, αλλ' ἐστίν ὅτε ΠΟΛΛΑ, ἢ καὶ ΠΑΝΤΑ. 'ΥΠΠΟΚ. Προρρητικόν. β

London : Longman & Co. 1818.

THIS book is by the author of that noticed in our last article. It relates to disorders, some of which every practitioner meets with, and which an extensive practitioner sees in all their varieties. These disorders have passed under various names, while their real causes have not been well understood. Dr. Hall does not attempt to decide respecting the causes of them ; but from certain points of resemblance he has collected them into a class, and has assigned to them one common name. He has also given an accurate history of them, and has pointed out the methods of treatment, which appear to him the most correct. It would gratify us to present such an analysis of this work, as would put our readers in possession of the substance of it. But we think this impossible. We shall therefore make such remarks and extracts as will give some notion of its value, that others may be induced to possess themselves of the work.

The evil effects of a sedentary life are well known. It is universally remarked, too, that these evils are aggravated by anxiety and grief, or by any of the depressing passions operating for a long time. From these causes we see persons affected with muscular debility, and with derangements of the functions of the alimentary canal ; derangements which are variously modified in different cases, but which almost always commence

with constipation of the bowels. After a certain time there ensue disorders in the other functions, and these sometimes take their character from causes, which may be called accidental; but more frequently from peculiarities of constitution. The disorders thus induced are acute, subacute, or chronic. Occasionally they assume some of the features of organic diseases, and are distinguished only by not pursuing the regular and simple course of those diseases. Such disorders may however arise in one, who already has an organic disease, or they may lead to the formation of an organic disease.

The disorders, which are arranged under the name of *Mimoses*, are not all to be treated alike; yet there are certain general principles to be kept in view, in the treatment of them all. 1. The stomach and bowels must be made to throw off their morbid contents, by active medicines, and afterwards the alvine discharges must be regularly promoted by the daily exhibition of gentle, but effectual purgatives. 2. The diet must be accommodated to the patient's powers of digestion. 3. Regular exercise should be directed and enforced, having respect to the patient's strength; and this exercise should be persisted in without any nice regard to weather. 4. Change of air and of objects should be advised, with a proper regard to the patient's rank, circumstances, and character. 5. All exciting and aggravating causes, such especially as affections of the mind, should, so far as possible, be removed or counteracted. 6. Tonics must not be indiscriminately employed; but, when the tongue is clean and while the bowels are kept open, they are sometimes beneficial. The light vegetable sub-tonics, and the preparations of bismuth, and of iron* are the tonics most frequently useful. The chalybeate mineral waters, taken at the springs, are also often found highly salutary. The cold bath, with proper precautions, will be found one of the best of tonics in these cases. 7. Regular hours as to sleep, going to bed in due season, and rising early, must also be mentioned among the important remedies in these cases.

It is that part of this treatment, which would in the most limited sense be called medical, that can be certainly carried into effect. The rest is sometimes rendered impossible by the disposition of the patient, but more frequently by external circumstances, which cannot be changed. Time however

* The following preparation, when Iron can be employed, though disagreeable, is among the most effectual we are acquainted with in the cases of chronic *mimosis*. R. Sulphatis Ferri ʒi. Acidi Suphurici gtt. xx. Aquæ ʒiv. Misce. One teaspoonful to be given in water four times a day.

will often bring about what has previously appeared impossible. Likewise accidents, which frequently thwart, will sometimes aid the efforts of the physician.

Having given these very general views of the subjects so ably treated in this work, we will subjoin some extracts. We hope that these will aid our readers in understanding the character of the work, and will induce them to give to it a careful perusal. Those who do this, must find, that it is one of those books, which they will constantly want to have at hand to aid them in obscure and difficult cases. We begin these extracts by copying the three first and four last paragraphs in the book.

"1. There is a Class of Disorders, each of which is singularly characterized by being COMPLEX, MULTIFORM, VARIOUS, AND CHANGEABLE, AND BY IMITATING, FROM THE APPEARANCE AND PREDOMINANCE OF PARTICULAR SYMPTOMS IN PARTICULAR INSTANCES, OTHER DISEASES VERY DIFFERENT IN THEIR NATURE.

"2. These affections have been variously and perhaps too exclusively attributed, by some authors, to a state of derangement in one or more of the chylopoietic viscera; and by others, to an unequal and undue distribution of the blood, by which a state of arterial excitement or of venous congestion is induced in some particular organ, or in some particular part of the sanguiferous system. I have scarcely ventured, in this work, to enter into any speculation relative to the pathology of the affections of which it treats; for this part of medicine, notwithstanding the ingenuity of some late theorists, seems scarcely to have advanced from the state of conjecture and uncertainty described by Celsus, whose words are still, in every sense, but too admissible. My object has rather been to present the reader with what a cautious and patient observation has taught me respecting the History,—the causes, description; diagnosis, and treatment, of these disorders.

"3. And as the real nature and connexion of the general and topical affections in these complaints, may frequently be dubious, I have deemed it advisable to appropriate some new term, which might, without implying any opinion on this subject, sufficiently express a prominent and important feature of this class of morbid affections. The denomination MIMOSIS, from the Greek word *μιμος*; *imitator*, will at once denote a remarkable peculiarity of these disorders, and serve to impress the mind with the necessity of distinguishing, in Local Affections, between those which belong to the present Class, and others which are either primary, or have a different origin."

"324. A certain activity of the body would appear to be necessary to insure the peristaltic movements of the intestines, and, in consequence, the propulsion of their contents. During sedentarieness, these movements are probably retarded, the alvine evacuation

becomes more scanty or less frequent, and the intestines remain loaded.

"325. From this loaded state of the bowels, their functions, and those of ALL the chylopoietic viscera, most probably become deranged. The alvine contents become disordered merely by delay; and their presence induces in its turn, a disordered state of the functions,—secretions or actions,—of all the organs contributory to digestion, and at length of other organs more remotely situated in the animal frame.

"326. The functions of the parts within the MOUTH become first obviously disordered. The secretions become morbid; the tongue becomes loaded and swollen; the gums red and tumid; the breath tainted; and the saliva sometimes profuse and offensive. The COMPLEXION and the SKIN become morbid, and there are the appearances observed in the *Mimosis Acuta*, or the *Mimosis Decolor*. This condition of the complexion and skin varies with the state of the original disorder, and with that of the tongue and internal mouth, of which it affords indeed an INDEX. With the state of the mouth and skin, that of the secretions and other functions of the whole course of the ALIMENTARY CANAL and the contributory digestive organs,—the LIVER, the PANCREAS, &c. may be *presumed* to be all morbidly affected. Digestion is variously deranged; the contents of the bowels become unnatural; and thus *reciprocally*. According to the state of things, nutrition is impaired, or the sensations are uneasy and painful.—To term these disorders stomachic, intestinal, hepatic, or bilious, would alike afford partial and inadequate views of this comprehensive subject. As co-existent or subsequent links of this chain of sympathies, the functions of the BRAIN, HEART, RESPIRATION, STOMACH, INTESTINES, UTERUS, BLADDER, ETC. become variously affected. The MUSCULAR SYSTEM and the SENSES also suffer in different instances. And nutrition, absorption, and secretion are impeded or impaired.

"327. From this view of the subject, the character of the *MIMOSSES*, § 1, may be deduced. And the recurrence of this word leads me, once more, to apologize for the introduction of a new denomination for these diseases. I have been induced to adopt this term, first, to prevent a great deal of circumlocution; and, secondly, because I could find no other in use, which was not objectionable from implying some hypothetical view of the subject. These motives, I trust, will appear sufficient to justify the innovation. I can at least conclude in the words of MORGAGNI,—*longe mihi potior cura est veritatis quam novitatis*.

Dr. Hall makes five species of *Mimosis*, which he denominates *Mimosis Acuta*, *Mimosis Chronica*, *Mimosis Decolor*, *Mimosis Urgens*, *Mimosis Inquieta*. Of each of these we shall furnish some idea by the following extracts.

“9. The severer form of the *Mimosis Acuta* is early and principally characterized and distinguished by the concurrence of the following symptoms; namely, *weakness, tremor, fluttering, faintishness, tendency to perspiration, susceptibility to hurry and agitation, and loss of flesh.*”

Cases of Mimosis Acuta.

“CASE I The first case of the *Mimosis Acuta* which I was enabled to distinguish, was that of Mr. M. aged 25.—He had, as I understood, been treated for *Fever* principally by the pulvis antimonalis, for several weeks.—He was, on my first visit, affected with tremor, debility, tendency to perspiration, and had suffered a considerable loss of flesh. The tongue was affected with enlarged papillæ, indented, and much loaded; the breath was extremely foetid. The pulse was frequent. He complained of pain in the left hypochondre.—These complaints were soon removed by a course of gentle purgatives.—This patient was employed in the sedentary occupation of the lace frame.”

“CASE V. *July 8th, 1818.* Mr. S. F. aged 22. He had worked during one year in the lace frame, principally during the night, when he became affected with the following complaints, about four months ago. He first experienced an unusual degree of weakness, which incapacitated him for his employment: he then complained of a propensity to sweating on any slight exertion or emotion, with pain of the head, loss of appetite, constipation, &c. At first too, he lost his flesh rather rapidly, to the amount, as he supposes, of about 14lb. The countenance became palish and sallow, and he was told that he had a *Liver Complaint*. The general weakness increased, and a degree of trembling was observed when he lifted his cup of tea to his mouth, when he attempted to walk or underwent any fatigue.—At present the prolabia are rather pale, the face near the nose is affected with an oily perspiration, the eye-lids are dark, and the general complexion is of a palish, sallow appearance. The albuginea is perfectly white. The tongue is white, loaded, and clammy. He perspires more than usual on any exertion. He has no headach or vertigo now, and has had no cough at any time. There is a sense of fluttering about the heart and stomach, especially on lying down. He says that he is low spirited, and does not like to be long alone or still. His appetite is still impaired; he complains of a sense of load at the stomach, with eructation, but he has no hiccough. The bowels are open. The urine was at first much loaded, but it is less so now. He complains of shifting pains about the limbs.—These complaints have been nearly stationary lately, the progress they appeared to be making at first having been arrested.—The patient became gradually better, after the date of this report, by taking opening medicines, bathing, and using gentle exercise with a change of air.”

“CASE IX. The last case which I shall detail in this place, will afford another instance of the extreme diversity in the history of this affection.—Miss M. A. aged 19, employed at the tannour. Two years and a half ago she became affected with loss of flesh, great weakness, faintishness, palpitation, fluttering about the heart, vertigo, headach, and general nervousness; she was at the same time easily startled and affected with agitation and trembling. Four years ago she was affected with *Melæna*, and again two years and a half ago, together with the symptoms just detailed.—She seemed to recover from these complaints and was in better health during the summer of 1817. In October she again became affected with the symptoms of the *Mimosis Acuta*, and she had again *melæna* with the other symptoms. She took the *pil. hydrarg.* with *rhubarb*, and has never since had any discharge of blood. She recovered rapidly during several weeks. Her complaint then became stationary, and afterwards worse. She took to bed, and continued almost constantly *in bed* for twelve weeks. She continued her pills, and united the most nourishing diet she could obtain, with a little ale. A month ago she rose from her bed, and has since gradually improved in strength and somewhat in flesh.—At present the countenance is pale; she is very feeble; she however trembles less; she has some appetite; the bowels are kept open by pills of *rhubarb*; the tongue is whitish. She seems to be recovering, and complains most of vertigo and pain of the head, of fluttering, of occasional palpitation, of faintishness, weakness, &c.”

“129. The *Mimosis Chronica* is denoted in general, by *fits of despondency and gloom, of invincible disinclination for exertion, of pain about the head, sinking at the præcordia, and heat or fulness of the stomach.*”

“137. The *Mimosis Chronica*, like the *Mimosis Acuta*, is liable to be obscured by the predominance of some particular symptom. But it does not appear necessary to particularize these cases after the ample detail of similar complications given in the last chapter.”

“150. The more acute form of the *Mimosis Decolor* may be described as observing three different stages,—the *Incipient*, the *Confirmed*, and the *Inveterate*. It may be characterized in general as uniting *a morbid state of the complexion, and generally of the surface, with recurrent pain of the head, and of the side, palpitation of the heart, fluttering and nervousness, and some tendency to loss of flesh, and to œdema.*”

“168. Such are the usual symptoms of the different stages of the *Mimosis Decolor*. But, as in the *Mimosis Acuta*, some of these symptoms are liable to be much aggravated, and to assume the form of serious *Local Disease*. The following list of these complications possesses therefore great interest:—

1. PAIN OF THE HEAD.
2. COUGH AND DYSPNŒA.
3. PALPITATION OF THE HEART.
4. PAIN AND TENDERNESS OF THE SIDE.
5. PAIN AND TENDERNESS OF THE ABDOMEN.
6. CONSTIPATION. DIARRHŒA.
7. MELÆNA.
8. LEUCORRHŒA.
9. HYSTERIC AFFECTIONS."

"170. In the more chronic form of the *Mimosis Decolor*, there is a continued though variable state of sallowness, of yellowness or icterode hue, or of a wan, squalid, or sordid paleness of complexion, without timidity, without either the pallidness, or the deep red colour of the prolabia mentioned §§ 151, 167, and without much tendency to œdema.

"171. A variety of the more chronic form of the *Mimosis Decolor* is distinguished by a peculiar and permanent ring of dark colour occupying the eye-lids, and extending a little, perhaps, towards the temples and cheeks."

Cases of Mimosis Decolor.

"CASE XXXVI. Miss F. aged 23, of delicate and sedentary habits. She was observed first to lose her colour and appearance of good health, several months ago. During this interval the countenance,—cheeks and lips,—the fingers, nails, and general surface, have become pale and exanguious, and there is a degree of puffiness of the integuments, and of œdematous swelling of the ankles. The tongue is white, loaded, and impressed somewhat by the teeth. There are headach, and pain of the sides alternately, vertigo, fluttering about the heart, listlessness and sense of fatigue from the slightest exertion, which has seemed to aggravate all her complaints indeed,—constipation and painful menstruation.—An attack of violent pain and throbbing of the head, with intolerance of light, noise or disturbance, and great nervousness, has been quite removed, and the other symptoms much mitigated, by purgative medicines, after copious bleeding had failed of inducing relief. The amendment in general appearance is also rapidly progressive."

"CASE XLIII. Miss M. F. aged 19. sister to the patient whose case is given § 181. Her complaints began in 1815, three years ago, and have during this interval been so various. multiform, and numerous as almost to preclude description or even a full enumeration. The case affords, however, such a remarkable illustration of the inveterate stage of the *Mimosis Decolor*, described § 166, as to render it highly desirable that it should be recorded.—Even before the date of the commencement of this affection, given above, the general appearance of health and spirits in Miss F. was observed to have declined. She gradually lost her colour and some flesh, be-

came nervous, listless, dispirited, and fainty. Since 1815 she has been continually an invalid; she has kept her room for many months, and her bed, for many weeks together. The countenance, prolabia, gums, and tongue,—the hands, fingers, and general surface, have become exanguious; the face is rather tumid; the skin opaque and pulsy; the legs and ankles very œdematous. There has been a very slow but gradual loss of flesh. The pulse is frequent, often about 100, but easily accelerated to much greater frequency. The appetite is various, and when any thing is taken, it is generally something of an indigestible nature;—once she took great quantities of pickles;—at other times toasted cheese, or frizzled meat, is the only thing she can eat. The bowels have always been torpid. The catamenia have been suppressed for a considerable time.—I shall now proceed to an enumeration of the various complaints from which she has, at different times, suffered so severely.—For some time there were returns every morning, of violent *pain of the head*, with intolerance of light and sound,—of which she is, indeed, generally very susceptible. For several months, there were evening returns of *delirium*, with incessant talking, singing, crying, or laughing,—usually ending in sleep. A number of times, but irregularly, there were attacks of *stupor*, from which she could not be roused, and which would continue during two hours. There has often been *pain about the sternum*, spreading over the chest and to the shoulder-points, apparently requiring, and yielding to *bleeding* from the arm. With pain of the chest, there has often been very rapid, *spasmodic breathing*, demanding free exposure to the fresh air at an open window. At other times, there has been an apparent *suspension of respiration*, during many minutes, the pulse still, however, beating; the breathing gradually returned with a sort of crowing noise like the hooping cough. At one period there were evening returns of violent and *incessant coughing*, which once continued from 7 p. m. till 3 a. m. without intermission; the cough ceased gradually and at length seemed scarcely to be a cough; it was relieved by bleeding, laudanum, breathing the vapour of hot water, &c. There has been *palpitation of the heart*, but not in violent attacks. There has not been much *fainting* affecting the pulse, except from bleeding. For many weeks there have been constant sickness, vomiting, and *irritability of the stomach*, every thing taken being immediately rejected. For a few times, there has been *violent hiccough*; this was arrested by a preparation of opium termed the black drop. There has ever been great *constipation*. Once there were the *symptoms of inflammation in the abdomen*, with great tenderness under pressure. There has sometimes been complete *opisthotonos*, the body being drawn and suspended on the occiput and toes for several minutes; then it would be drawn in a variety of other different ways. There have been general and violent *convulsions* of the body. There has often been *locked jaw*,—once for eight weeks together, and several times for shorter periods;—the under lip is then sometimes drawn

between the teeth and bitten. The hands are often clenched, and the limbs drawn in a twisted manner round each other. There has been a loss of sight, of hearing, and of the use of some of the limbs. The catheter has been daily used for *retention of urine* for many months. She has twice complained of pain of the spine about the loins, which has, like the other symptoms, disappeared after a time.—From a perusal of this deplorable list of complaints, the young student will be prepared what to meet in similar cases of Mimosis. The case is detailed here, although it belongs also to another place in this work, in order to show the connexion of these affections with the Mimosis Decolor—It may be remarked that the sufferings of this patient have sometimes appeared to be partly corporal and partly mental. They were always aggravated by surprize agitation, or noise; they recurred much in the evening, and in various succession. They were, as well as the *remedies* employed, various, and multiform in the greatest degree.”

“CASE XLVI. Mrs. C. aged 32, and mother of seven children. April, 1816. This patient refers her complaints to mental distress; they took place insidiously, about five years ago, and three years and a half ago she was induced to apply to medicine. At first, Mrs. C. was affected with recurrent pain of the head, under the sternum, of the right side, and of the bowels. She was alternately constipated and affected with diarrhœa, but habitually of a costive habit.—At present there is a pale yellowness of the complexion; the upper and under eye lids are puffy and dark coloured; the conjunctiva is white; the face is apt to be somewhat swollen in the morning. The lips, gums, and tongue are pale; the tongue, formerly loaded, is now clean; the breath, formerly tainted, is now inoffensive. The hands are very pale, sometimes a little puffy. The ankles are apt to be œdematous in the evening. The skin in general is yellowish and opaque, and always dry. There are great languor, listlessness, incapability for exertion; and some loss of memory and mental energy. Formerly there was acute pain of the head; lately the pain has been duller, with vertigo, tinnitus aurium, or a momentary defect of sight. There is some heaviness for sleep. She is easily hurried and fluttered. There is much despondency. The appetite is various,—sometimes fastidious, sometimes voracious; she is particularly fond of chewing grits. The alvine evacuation is very offensive. Mrs. C’s youngest child but two is four years old; the youngest but one was born a year and a half ago; the youngest nine weeks ago; the catamenia had generally appeared once between each pregnancy, but this was not the case between the last but one and the last, which was not suspected until far advanced. Mrs. C. has scarcely been able to suckle her three last children.—This patient has recovered in a very great degree from her complaint, by a persevering use of calomel, and of rhubarb and aloetic pills, and she enjoys at present a very good state of health. Her complexion is greatly improved; but it is apt to be affected when-

ever she is accidentally indisposed; at such times, too, she is reminded of her former painful complaints."

Mimosis Urgens.

"241. I have ventured to substitute this denomination for the very objectionable term, *hysteria*. The adjective expresses that character of *hurry*, and of apparently imminent danger, so usual in almost all the forms of this affection, and will be understood by every reader by being associated with an English word, to which it gives origin.

"242. The *Mimosis Urgens*, besides the characteristic just mentioned, is generally denoted by combining some considerable emotion of the mind, denoted by *sighing, sobbing, tears, or laughter, with a sense and expression of suffocation, and with some urgent affection of the head, heart, respiration, stomach, or muscular system.*

"243. The *Mimosis Urgens* most frequently occurs as symptomatic of the *Mimosis Decolor*, or of the more continued form of the *Mimosis Acuta*. But it is occasionally induced by severe mental emotions, as excessive joy or grief; and a less curable form of the affection has been occasioned by surprise, but especially by fright.

"244. Of the *Mimosis Urgens* there are three forms,—the Mild, the Severe, and the Inveterate; and there are most numerous modifications."

"260. The varieties of the *Mimosis Urgens* are more numerous even than of the other forms of *Mimosis*. They are also more *acute, urgent, and violent*. The following list, it is hoped, will be found tolerably complete:—

1. CONVULSION.
2. PAIN OF THE HEAD. DELIRIUM. STUPOR.
3. PAIN OF THE CHEST. DYSPNŒA. COUGH. SUSPENDED RESPIRATION. A PAINFUL AFFECTION OF THE DIAPHRAGM. IMITATION OF CROUP; AND OF IMPENDING SUFFOCATION.
4. PALPITATION OF THE HEART. SYNCOPÉ.
5. PAIN OF THE ABDOMEN. HICCUGH. RETCHING AND VOMITING.
6. DYSURY. RETENTION OF URINE.
7. APPARENT PARALYSIS.
8. TRISMUS. TETANUS. CONTRACTED HAND OR FOOT."

"263. The Severe Form of this affection, §§ 246—257, is exemplified in almost all its varieties, by Case XLIII. § 190.

"264. The Inveterate Form, § 258, is also illustrated by the same case, for it has at length assumed that form. The following case amongst numerous others, also presents an example of this stage of this singular affection:—

"CASE LVII. M. H. aged 30. September 16th, 1813. Her mother states that her complaint began *fifteen* years ago, and that during the last *five* years she has been unable to rise unassisted from her bed. During the whole of this period she has been subject to hæmatemesis, retching and vomiting, and to constipation of the bowels.—At present there are great nervousness; starting from the

slightest noise: agitation on the approach of a stranger; general, rapid and forcible tremor, so that the pulse can scarcely be felt; and an almost similar affection of the respiration: there is the strangest alternation of spasmodic heaving of the chest and protrusion of the abdomen; the nostrils and the head are moved at each respiration; there is often retching; and frequently retention of urine. This state of agitation is permanent. The affection is, at different times, attended with pain of the head, and a sense of uneasiness about the throat, and at the scrobiculus cordis."

"292. The principal causes of the *Mimosis Urgens* have been enumerated, § 243. This affection has sometimes originated also from causes of weakness, as too long lactation;—and from fatigue, anxiety and watching. I have seen this affection in the most decided form, in the Male Sex.

"293. The Treatment embraces two objects; the means of affording immediate relief in the paroxysm, and the mode of prevention.

"294. The attack of the *Mimosis Urgens* is relieved by æther, *sp. ammoniæ comp.*, opium, &c.; by stimulating liniments containing the same substances; by fomentation with hot water; and, if necessary, by blood-letting.

"295. The prophylaxis consists in removing the original disorder, § 243, if the *Mimosis Urgens* depend on this cause; but especially in the due administration of Purgative Medicines, Diet, Air, and exercise, the principles of which have been already detailed, §§ 107, 141, 233, et seqq."

Mimosis Inquieta.

"296. The affection of which a *Sketch* is attempted in this place, occurs during the course of different diseases, and has been noticed by medical writers under the denomination of inquietude, to which has generally been added the epithet, mortal. The tendency of the *Mimosis Inquieta* is, however, very different in different instances;—for it is sometimes merely the effect of derangement in the digestive organs; sometimes it implies some obscure disease, as its cause; sometimes it arises from the too copious action of a purgative, or from too copious bloodletting; and it is sometimes the precursor of dissolution.

"297. The *Mimosis Inquieta* is, in different cases, denoted by *continual restlessness; wakefulness; delirium; continued, rapid, and hurried breathing; frequent dry cough; a sense of fluttering and hurry; some spasmodic affection; hiccough; and great frequency of the pulse.*"

Cases of Mimosis Inquieta.

"CASE LXVI. Mrs. B. aged 40. May the 18th, 1818. She miscarried a fortnight ago; her illness appears to have been pro-

longed by mental agitation; at present she suffers from the following symptoms—the countenance and manner are not very anxious; but she experiences and manifests a perpetual sense of restlessness, and says that she feels as if she should be relieved by getting up and running about the room; she requires to be continually fanned; there is great wakefulness; the pulse is 150; there are sickness and retching, especially on moving. This patient recovered on taking mild carminative purgatives.

“CASE LXVII. Mrs. D. aged 33. August 1818. The following symptoms occurred twice in this patient, during the course of the affection denominated by Dr. Willan, the Summer Fever, and each time, apparently from the action of a purgative; the first attack was, however, much less severe than the second.—On the 5th, a purgative was ordered, which operated actively. During the succeeding night Mrs. D. was wakeful, restless, and somewhat delirious; I saw her at 5 a. m.; to the above symptoms there succeeded a hurried state of breathing, which continued three quarters of an hour, attended with a pulse accelerated from 125 to 140. Mrs. D. at length became more composed, and lay still with the eyes closed for about an hour. The breathing, however, again became hurried, the pit of the stomach was drawn in by a sort of spasmodic movement, once there was a little retching, and once a spasmodic affection of the diaphragm resembling hiccough, and the hands were clasped. The affection was relieved by bathing the face with cold water, admitting the fresh air and by fanning, and by twice giving fifteen drops of the *tinctura opii* and of the *sp. ammoniæ comp.* This affection recurred several times; at one time the pupils appeared contracted and *fixed*, and the body and limbs were stretched out spasmodically.—There was occasionally some hurry of breathing on the 7th.—Mrs. D. eventually recovered.

“CASE LXVIII. Mrs. S. aged 45. She had long been affected with symptoms of the *Mimosis Decolor*. She became pregnant, and during the progress of gestation, there was considerable anasarca. She was confined a few days ago. In this patient great hurry and heaving of the breathing, and great fluttering about the heart took place, with frequency of the pulse, and continued with little variation until she expired.

“CASE LXIX. Mrs. T. aged 22. April 1818. This patient had laboured under the symptoms of puerperal fever, when the following affections supervened. The first was a catching in the respiration with a protrusion of the *pomum adami*; then an attack of dry, husky, and repeated coughing; and on appearance of general agitation. This affection was removed by giving thirty-five drops of the *tinctura opii*. On the next day a similar attack again took place;—there were catching pains and motions in the neck, back, and right side of the chest, and of the diaphragm on the right side by which the false ribs of this side were visibly drawn inwards; hiccough, retching and eructation; irregularity in the respiration; fits of a dry, and repeated cough.—This affection continued not-

withstanding every remedy, and eventually exhausted the patient already much reduced by a severe disease and active remedies."

"317. When the *Mimosis Inquieta* arises from a disordered or loaded state of the stomach or bowels, § 296, a purgative is the remedy on which most reliance is to be placed.

"318. In the case of an obscure disease, § 296, it is plain that this must be removed before relief can be obtained.

"319. In the other cases, the *tinctura opii*, the *sp. ammoniæ comp.*, wine; stimulating liniments; proper fluid nourishment, cautiously given with wine; bathing the face with cold water; the effervescing medicine; fanning, and a free air, are the principal remedies."

Our extracts have been much more copious than was intended, when this article was commenced. It must not be thought however, that we have given the substance of the book. Far from it, we have only endeavoured to make known in what description of cases the practitioner will find this book useful to him. We have extracted about twenty two pages from one hundred and seventy six, that is, one eighth of the whole. Those, who see any merit in what we have given, may be assured that they would scarcely find one page in the book less worthy of regard. This is especially true in the parts, which relate to diagnosis, from which however no extracts have been made.

It may be proper to remark, that the author has not explained, nor does he pretend to explain the nature, or the proximate cause of these disorders, which he has included under the class *Mimoses*. He has nevertheless done an essential service, first, in teaching the means of distinguishing disorders of function from organic diseases; and second, in pointing out the simple modes of treatment, which in most cases will be found successful.

*Sketch of the Medical Life of the late Dr. JOHN JEFFRIES.**

[Communicated for the New England Journal of Medicine and Surgery.]

ANXIOUS, if possible, to do justice to the memory of a man, alike distinguished for the brilliancy of his talents and the excellent qualities of his heart, the writer of this memoir regrets that the narrow space necessarily allotted to biographical communications in Medical Journals, obliges him to confine himself to a brief account of Dr. Jeffries' professional career: and this, more particularly, because he has in his possession a large quantity of valuable *memoranda* and other documents, which would not only enable him to exemplify the peculiar virtues of departed worth, but, also, to communicate many interesting and highly important medical results, tending to illustrate the correctness and efficacy of the doctor's theory and practice.

Dr. JOHN JEFFRIES was born, at Boston, on the 5th of February, 1744. He was the third son of David Jeffries, Esq. (who, for more than thirty years, honourably filled the office of Town Treasurer) by Sarah, daughter of George Jaffrey, Esq. of Portsmouth. At an early age he was adopted by his uncle, the Hon. John Jeffries, who placed him under the care of Mr. Lovell, a popular and experienced tutor. In 1759, he entered the University of Cambridge, where he graduated with its first honours and, immediately afterwards, commenced his medical studies under Dr. Lloyd. The small pox, which raged at this period with uncommon violence, afforded him an ample field for observation and improvement. A close and careful investigation of this disease induced him to consider it as one of the most important that could afflict mankind; not on account of its general fatality, but because its regular stages furnished *data*, which tended to elucidate many of those anomalous symptoms of other diseases that perplex and baffle the most experienced practitioners; and the principles he deduced therefrom have since, as he was in the habit of remarking, frequently "stood him in good stead" at the bed-side of his patients. While under the tuition of Dr. Lloyd, Mr. Jeffries was sent by his instructor to attend the Small-Pox Hospital on Castle Island, where the following accidental occurrence afforded him an opportunity of evincing that peculiar talent of

* This article was received too late for insertion before the Reviews.—
ED.

attributing effects to their proper causes, and of founding rational theories on practical observations which, subsequently, marked the course of his long and successful professional career. Four of his patients, in the delirium of the most active stage of small-pox, escaping from their attendants, proceeded across the flats and plunged into the channel; they were, however, rescued from the water and brought back to their apartments: favourable symptoms immediately succeeded and, although most of the other patients fell victims to the malignity of the disease, they all speedily recovered. Reflecting deeply on the manner in which this beneficial effect was produced, Mr. Jeffries was convinced that the popular mode of treating inflammatory affections was erroneous, and he, therefore, successfully resorted to the antiphlogistic practice, which had before been advocated and has since been adopted by the most distinguished practitioners of Europe.

The degree of Master of Arts having been conferred upon him by the University of Cambridge, Mr. Jeffries arrived at that important period when the principles he had imbibed as a pupil, were to be submitted to the test of more extensive professional practice: on their correctness and efficacy depended every hope of future success: the event exceeded his most sanguine expectations. Unaided by friends, and devoid of private patronage, he speedily obtained, by his merit and exertions, a considerable share of town and country practice. The first entry in his professional day book (of which the whole is extant) was made on the 16th of March, 1766, from which time his emoluments were progressively increasing; but, notwithstanding these flattering prospects, his anxiety to excel in an art of such vast importance to mankind, on which depended the happiness and even the existence of so many fellow-creatures, impelled him to visit the medical schools of Europe; he, accordingly, embarked for England and placed himself under the tuition of Dr. William Saunders, whose lectures on chemistry and on the theory and practice of physic, have been so justly celebrated. He also sedulously attended two courses of lectures on anatomy and surgery, by Mr. Joseph Else; twelve courses on the theory and practice of midwifery, by Dr. Colin Mackenzie; and officiated, for twelve months, as dresser at Guy's Hospital, under Messrs. Way, Smith, Else, and Martin. From all these distinguished professors he received the most flattering testimonies of their approbation and friendship, both before and after he returned to his native country.

On the first of June, 1769, having written and defended a Latin dissertation, the university of Aberdeen conferred on him the degree of Doctor of Physic, he being, as it is believed, the first native of the American provinces, who obtained that honourable rank. In the same year he recommenced his professional labours in Boston, with astonishing success.

His friend, Admiral Montagne, commander in chief of the naval forces on the North American station, appointed him, in 1771, assistant surgeon of the Captain, ship of the line, then lying in the harbour, and having her hospital on shore, which he regularly attended until the 30th of June, 1774, when, the vessel changing her station, Captain Symonds, her commander, sent him a handsome written acknowledgment of the benefits which the service had derived from the exercise of his skill in surgery and medicine. At the commencement of the American revolution, having previously acquired the principal share of military patronage, he was professionally engaged by the commander in chief of the British forces; and many of those who were wounded at the dreadful conflict on Bunker hill, both Americans and British, experienced the advantage of his skill and attention. He identified, to General Howe, the lifeless body of the lamented Warren.

The British garrison having evacuated Boston, Dr. Jeffries accompanied their general to Halifax, who, on the 24th of May, 1776, conferred on him the appointment of Surgeon General to the Forces in Nova Scotia, to which, on the 21st of August, 1778, was added, by his friend, General Eyre Massey, commander in chief of the province, that of Purveyor General to the Hospitals; and in December following, he received, from the British government, the rank and pay of Apothecary General. While he filled these important stations, and largely benefited by their incidental private practice, he eagerly availed himself of every opportunity to alleviate the afflictions of his captured countrymen. This appears abundantly evident from the numerous grateful letters and other documents, which have been found among his papers.

That he discharged the duties of his several official stations with honour and ability, the following extract from a voluntary certificate, written by the commander in chief, when about to sail for Europe, will unequivocally testify:—

“Halifax, 2d October, 1778.

“As I have got His Majesty’s leave of absence to return to Europe, for the benefit of my health, as well as to settle my

family affairs, I think it highly incumbent on me to certify, under my hand, that Dr. Jeffries, with two mates, had the care of all the wounded and sick soldiers that were left behind, at Halifax, by the Grand Army: he also had the care of all the soldiers' wives and children; he inoculated many, by my orders, for the small-pox* (none of whom died.) He had the care of all the French, as well as American prisoners, doing his duty with cheerfulness and alacrity, and I never had the least complaint from any patient he had the care of." * * * * "I cannot in justice leave this garrison, Sir, without giving you this testimony of your good conduct during my command; I therefore, wish a speedy peace, that you may again return to your own country to enjoy every comfort your heart can desire, with your own family and friends. I most sincerely wish you health.

And I am, Sir,

with respect and esteem,

your obedient servant,

EYRE MASSEY.

Major-General commanding the Province of Nova-Scotia."

Fatigued by the incessant labours of his various avocations, Dr. Jeffries requested permission to visit England, and to appoint a proper substitute to officiate during his absence; which being granted, he and his family embarked on board the *Iris* frigate, commanded by his intimate acquaintance, Captain Keppel; and, after a dangerous voyage of twenty-eight days, landed at Portsmouth on the 28th of March, 1779. His stay in England, however, was but of short duration. His friend, General Massey, had spoken so favourably of his abilities to the secretary at war and other leading members of the government, that he was ordered to be examined, at Surgeon's Hall, on the first day of July following, preparatory to his receiving the appointment of Surgeon Major to the Forces in America, (a newly created office.) He, accordingly, underwent a rigid examination, by the celebrated John Hunter and other distinguished professors, at the conclusion of which, he was told by the President, Mr. Hunter, that his answers and observations did infinite honour, not only to himself, but to his instructors, and that he would be reported in every way qualified for the important office for which he was destined by government. Mr. Hunter invited him to attend a capital operation which he was about to perform; and, during the remainder of his stay in

* General Massey at one time ordered no less than 1500 to be inoculated.

London, he daily witnessed the operations and dissections of that eminent surgeon.

Having received his commission, he embarked on board the *Raleigh* frigate, Captain Gambier, on the 4th day of October, 1779, and sailed, in company with the *Richmond*, for Cork, to collect a fleet of transports which they were to convoy across the Atlantic. Here he had the happiness of meeting his esteemed friend, General Massey, now commander in chief on this station, whose former kindness he partly repaid by essential professional services.

Contrary winds, and the delays incident to collecting a fleet of transports, detained the *Raleigh* and *Richmond* at Cork for a considerable time, during which Dr. Jeffries was actively and profitably employed by the military and by numerous families in the vicinity; from some of whom he obtained commendatory letters to the commanding officers and other distinguished persons in America. At length he re-embarked, and, proceeding to sea, on the 24th of December, arrived at Savannah on the 17th of the succeeding February: here, however, he did not land, but proceeded to Charleston, South-Carolina, and on the 11th of March joined the grand army under Sir Henry Clinton, who ordered him back to Savannah, where his services were urgently required, numerous important surgical operations waiting his arrival. The opportunity he here enjoyed of observing the progress of inflammation and disease in a hot climate, materially benefited his future practice, particularly during the torrid summers of his native state.

He now received intelligence of a severe domestic affliction, which rendered him extremely anxious to return to England. As a preparatory step, he solicited and, with some difficulty, obtained an order for his removal to New York, where, after having again visited Charleston, he arrived in the *Beaumont* man of war, on the 14th of July, 1780, and was immediately employed at the head of the surgical department. His private practice also became so extensive, that he received from Dr. Baillie, who has since become one of the most eminent physicians of Europe, very advantageous proposals to join him in a permanent medical establishment; but the motives which urged him to visit England were irresistible. Having resigned his commission in favour of Mr. Loring, surgeon of the Hospital, he obtained a passage on board the *Yarmouth* of 64 guns, and, much to the regret of his American friends, recrossed the Atlantic ocean, and, on the 26th of December, 1780, safely landed at Falmouth.

In the course of his practice in America, Dr. Jeffries had essentially benefited the honourable Captain Fielding, who gave him a letter of introduction to his relation, Lady Charlotte Finch. This lady filling an exalted station in the household of the Queen, her patronage and influence were extensive, and she gratefully exerted both in the service of her relation's benefactor. She introduced and strongly recommended him to the royal physicians, Doctors Turton and Warren, from both of whom he subsequently received much kindness and attention. They consulted with him as to the best means of promoting his future interests: Dr. Warren advised him to conform to the usual custom of the metropolis, and confine himself to a particular department of the profession. Although of opinion that the several branches, in as much as they tended to elucidate and assist each other, should always be united, he thought it prudent to follow this friendly advice, and finally determined to confine his attention to midwifery and the diseases of children. His American friends, however, insisted upon his violating this determination, and he, in consequence, procured a special license to practise, also, in surgery and medicine.

Few are acquainted with the depth of Dr. Jeffries' scientific researches, or the extent of his acquirements. Wholly devoid of vanity, he evinced them only in the warmth of friendly controversy, or in his eager pursuit of experimental demonstration.

A modest account of his two ærial voyages having been already published by himself, and it being intended to comprehend in this memoir those circumstances, only, which are connected with his professional character, a very few remarks on the subject must suffice. His first ascent originated in an ardent desire to ascertain experimentally the correctness of certain pre-conceived hypotheses relative to atmospheric temperature, and the practicability of some ærostatic improvements which had suggested themselves to his inventive imagination. The other enterprise, in which he and his companion, Monsieur Blanchard, were the first that ever crossed from England to France, *by the route of the air*, was influenced by similar motives. Nor were they without professional advantages; for, besides procuring him the notice of the King of France, the personal civilities of the late unfortunate Maria Antoinette, and the friendship of the Duke of Dorset, the British ambassador, they obtained him an introduction to all the learned and scientific societies of Paris (of which he was elected an honorary member) and facilitated his access to the medical and anatomical schools of that intellectual metropolis. But his duty to his

patients in England urged his speedy return to that country. He drew up a paper, detailing the result of his various experiments, and presented it to the Royal Society, before whom it was read with much approbation. Dr. Blagden, secretary of that learned body, had assisted him with many valuable hints previously to his first ascension, and was subsequently most active in promoting his professional interests, observing that a private individual, who had voluntarily expended so large a sum* in the cause of useful science, was truly worthy of public patronage. The collateral benefits that resulted from his ærial expeditions, were greater than he expected; they secured him the interest of Sir Joseph Banks, President of the Royal Society, the Duchess of Devonshire, and other powerful friends.

His practice and his reputation rapidly increased from this period until the summer of 1789, when he received letters urging the necessity of his immediately repairing to Boston, to secure some property which had devolved to him by the death of a near relation, in compliance with which he embarked on board the ship *Lucretia*, on the 13th of August, in that year and, on the 11th of November following, arrived in his native town. He was affectionately welcomed by his earliest medical instructor and many others, for whom, in the days of his youth, he had formed a sincere attachment. His diary, from which most of the preceding facts have been extracted, strongly marks the fervent feelings of his heart when, after an absence of fourteen years, he beheld again the land of his fathers. It was, however, many months before he could make up his mind to relinquish his lucrative business in England; but the entreaties of his friends, and the love of his native town, finally, prevailed and, on the 11th of April, 1790, he resolved to establish himself once more as a medical practitioner in Boston.

The political animosities resulting from the recent successful struggle for independence had not yet subsided; and few individuals who, like him, had filled offices of high responsibility under the British government, during the greater part of the conflict, would have ventured to make an experiment of such doubtful success; but he felt that, while he had honourably discharged his duty towards those in whose service he had been before the commencement of the revolution, he had neglected no opportunity, consistent with that duty, of benefiting his countrymen; and he now confidently relied upon their jus-

* Dr. Jeffries paid M. Blanchard 100 guineas for the privilege of accompanying him in the first voyage, and *all* the expenses (preparatory and incidental) of the second.

tice and liberality. To the honour of both parties, this confidence was amply repaid; and he speedily acquired the esteem and professional patronage of a large proportion of the most respectable population of Boston and its vicinity.

After an uninterrupted and successful practice of fifty-three years, he was seized with an inflammation in his bowels, originating in a hernia, occasioned by great exertions in his first ærial voyage, which, defying the skill of those able and friendly brethren, whose attendance the author of this paper anxiously requested, he died, on the 16th of September last, deeply lamented by all good men, to whom he was known, but lamented most by those who knew him best.

“ Multis ille bonis flebilis occidit
Nulli flebilior quam ‘mihi.’ ”

Of the many virtues which this excellent man possessed, some were so intimately blended with his professional life, that an allusion to them will not be any deviation from the professed intention of this memoir.

Of all the important, and of many minute, circumstances of his long and eventful life, he kept regular diaries, both professional and private. These are interspersed with numerous remarks and reflections, which prove, at once, the correctness of his judgment, the liberality of his conduct, and the soundness of his moral and religious principles; while they evince an acuteness of feeling and a degree of amiable forbearance which many would deem incompatible with each other.

No man more heartily despised intrigue of every description; envying no rival's reputation, he was ever ready to promulgate the merits of his brother practitioners. The poor man, from whom no fee could be expected, equally shared his best attentions with the richest of his patients; and if money were wanting to purchase the medicines and comforts he prescribed, it was frequently supplied from his charitable purse. To his pupils he was a kind, anxious, and attentive, although, sometimes, an irritable master. Irritability, indeed, the usual concomitant of age, was the principal failing of his latter years; but it was so tempered by the amiable qualities of his heart, that those who knew him cheerfully submitted to the one, assured of ample recompence from the other. More anxious to promote the general interests of the profession than his own, he expended, yearly, a considerable sum in the purchase of valuable medical publications; and his library and anatomical preparations, with which few in the United States

could compete, were always open to the inspection of his professional acquaintance.

A brief analysis of the leading principles, upon which was founded the successful practice of this eminent surgeon, midwife, and physician, can not be uninteresting to the readers of the *New England Medical Journal*.

In surgery, although a most expert and steady operator, he never resorted to the knife, until every other means, that science and experience could devise, had proved ineffectual. Of his persevering forbearance in this respect, many highly respectable individuals can now bear grateful testimony. A reference to his surgical records clearly shews that he had, early in life, adopted the practice of coolly and lightly dressing, after capital operations, which some eminent European masters have since demonstrated to be the most rational and efficacious: this, indeed, was the necessary result of his favourite principle, that little excitement was required to carry the action to its adhesive bounds.

It has been already observed that Dr. Jeffries, while in London, chiefly confined his practice to cases of Midwifery and the Diseases of children: to the former science he unremittingly devoted the active energies of his capacious mind. He regarded the regular constitutional changes effected by nature in the various stages of gestation, and her extraordinary efforts to afford relief, as loadstars, not only in this particular department of his profession, but in the investigation of other constitutional changes, under nature's guidance, which his intelligence discovered to be analogous.

He was averse to the use of instruments, except in the most urgent cases, in such, however, no man was firmer in insisting upon their necessity, or more skilful in their application.

The best criterion of the correctness of his theory is the success of his practice, and of this it is sufficient to observe that, although employed in nearly two thousand* cases of midwifery after his return to Boston, he only lost one patient. In this case his injunctions were violated.

The medical department of the profession opens the widest field for the cultivation of ingenious theories, to avail himself of which Dr. Jeffries was peculiarly qualified, by the inventive powers of his philosophic mind; but his judgment taught him to consider the health of his patients of too much moment to be the subject of visionary speculation. He was, however,

* The number of cases recorded from 1790 until the commencement of 1812 is 1424. The diary from this time has been mislaid.

an ardent promoter of physiological inquiry, and readily adopted every rational improvement. The too eager pursuit of novelty, and the passion for experimental medicine, he justly reprobated; and this induced many to imagine, erroneously, that he was an enemy to all theories. His own systems, indeed, were, in medicine, what Lord Bacon's were in moral philosophy; being chiefly founded on inductive reasoning.

The vast importance which he attached to the chylopoetic viscera was a distinguishing peculiarity of his physiological opinions. To the digestive organs he referred for an explanation of many phenomena in the animal economy; regarding them as the emanating point of most morbid affections, he was enabled to establish those pathological principles, upon which was founded the successful administration of cathartic remedies.

Although these fundamental principles are apparently at variance with the systems of some ingenious physiologists, reflection will shew that they are not incompatible with the most rational; and a similar doctrine has since been promulgated in the useful publications of Dr. Hamilton and Mr. Abernethy.

Dr. Jeffries never entered a patient's apartment with a preconceived opinion, nor did he think it sufficient to ascertain the particular species of affection: It was not for the name of the disease that he prescribed; his inquiries were perseveringly directed to the immediate and most pressing symptoms, to relieve which was his primary endeavour.

His great experience in infantile diseases, in which no assistance could be derived from the representations of the patient, produced an habitual acuteness in examination, which not only enabled him to discover the seat and origin of the affections in these patients, but materially tended to prevent his being misled by the frequent misapprehensions and erroneous descriptions of adults. Nature appears to have been the instructress whom he most implicitly obeyed and cherished; he consulted her in the construction of all his theories; to relieve her wants and assist her efforts, were the principal objects of all his practice.

The author of the preceding pages readily admits that they have been penned by no impartial hand; but he must, at the same time, explicitly declare, that they do not record a single important fact which he has not documents to corroborate. Many of these he would gladly have published, but, grateful for the indulgence of a larger space than is usually afforded to communications of this description, he is unwilling to trespass further on the liberality of the conductors of this useful and scientific publication.

SELECTIONS.

On the Organic Diseases of the Brain. By JOHN ABERCROMBIE, M. D. Fellow of the Royal College of Surgeons of Edinburgh.

[From the Edinburgh Medical and Surgical Journal.]

WHEN urgent symptoms seated in the brain do not yield in a short time to active treatment, and, on the other hand, do not shew any tendency to come speedily to a fatal termination, we begin to suspect some of those permanent changes in the organization of the brain, which we include under the general term, organic disease. The morbid condition, in such cases, may exist under various forms. There may be a tumour external to the brain, and in its formation quite distinct from it. There may be a tumour imbedded in the substance of the brain; and there may be induration of a portion of the brain itself. To these are to be added, thickening of the membranes, ossifications, hydatids, and several other morbid appearances, which will be more particularly referred to in the sequel. The symptoms also appear under various forms; and they vary considerably in their progress. In some of the cases they are at first very slight, and advance slowly and insidiously for a considerable time before they assume an alarming appearance. Other cases commence with more violent symptoms, which have generally either an inflammatory or an apoplectic character. In these, the first urgency is relieved by the evacuations and other remedies that are employed; but we soon find reason to believe that the disease is not thus to be removed. The patient perhaps is becoming pale and exhausted under the remedies, while the affection of the head is but little abated. New symptoms probably begin to appear, such as important affections of the senses, convulsive or paralytic symptoms; and thus we are led to perceive that the complaint which at first had the appearance of an acute attack, has passed into organic disease. Organic affections of the brain also frequently supervene upon injuries; and in these cases we observe the same variety in the symptoms. The injury may have been slight, and at the time perhaps excited no alarm; and it is only after a considerable interval that we find reason to suspect that from that period some diseased action has been going on in the brain, which at last comes to produce symptoms of a most unequivocal and alarming nature;

or the injury may have been severe, the immediate urgency of the symptoms may have been subdued by the appropriate treatment, and organic disease may have been left, as the result of the morbid condition that had thus been excited. In all these cases the disease may go on for a considerable time, producing a variety of symptoms to be afterwards mentioned, and may at last be fatal suddenly by convulsion; more slowly by coma, of several days continuance; or still more gradually by the patient being, without either coma or convulsion, worn out by protracted suffering.

In tracing the symptoms of organic disease of the brain, it is necessary to distinguish betwixt those symptoms which are properly connected with the disease itself, and those which immediately precede the fatal termination; and it is necessary to keep in view the changes which take place in the morbid appearances, in connexion with these fatal symptoms. It is chiefly when the patient dies of some other disease, without any change in the disease of the brain, that we find the morbid condition of that organ in what may be termed its original state. When the disease is itself fatal, it is generally by an attack of chronic inflammation; and, in connexion with this, important changes take place both in the seat of the original disease and in other parts of the brain. In the cases which will be referred to, these varieties will be observed. There are some in which, while the disease in the brain was going on, the patients died of other diseases, or were suddenly killed by accidents; and there are some in which they died suddenly in convulsion, without any symptoms that previously indicated perceptible change in the disease. There are some also in which they died gradually exhausted by protracted suffering, without any important change in the symptoms in the brain. But there are others in which, a short time before death, important changes took place in the symptoms, resembling an attack of chronic inflammation, and the patients were cut off by the usual course of this affection, terminating by coma of several days continuance. In these cases, besides the original organic disease, we find various morbid appearances connected with the fatal attack, such as effusion, suppuration, or a softened state of a part of the brain; (see case 11th;) and, in some of them, there is reason to believe that the organic disease itself, or part of it, has passed into suppuration. This probably occurred in cases 10th and 28th. In some cases, again, an attack of this kind may occur, and may be carried off by the ordinary treatment, the original disease then going on, until another attack of an inflammatory character is fatal. This probably occurred in cases 6th and 13th.

Another remarkable variety occurs, in which the organic disease seems to produce no urgent symptoms until the symptoms of chronic inflammation appear. This probably occurred in case 1, in which the symptoms commenced only six weeks before death, though the remarkable tumour that was met with on dissection must have existed for a much longer period.

In all the forms of the disease remarkable remissions of the symptoms occur, so that the patient and his friends may be deceived into a belief that no fixed disorder exists in the brain. Sometimes the pain occurs periodically, and with remarkable regularity, generally attacking in the early part of the night and going off towards morning. In other cases it is excited by various occasional causes; such as external heat, stimulating liquors, bodily exertions, agitation of mind, or even the excitement of cheerful conversation.

SECT. I.—SYMPTOMS OF ORGANIC DISEASE IN THE BRAIN.

When we attempt to arrange the organic diseases of the brain, according to their symptoms, they seem naturally to be divided into eight classes.

1. The first class is distinguished by long continued and severe headach, without any other remarkable symptom. The pain varies very much in its seat and in its severity; and, in some cases, it occurs in paroxysms so as to resemble periodical headach; in other cases there is constant pain, but with paroxysms of aggravation. It is sometimes an acute lancinating pain, darting across the head from temple to temple; sometimes a more obtuse and fixed uneasiness, often referred to some particular part of the head, as the crown or the back of the head. In many cases it is accompanied by a violent throbbing, and this may be general, or it may be referred to a particular part, as the back of the head, or one temple. In the more violent paroxysms the pain is intense, obliging the patient to remain for a considerable time in one position, the slightest motion aggravating it to perfect torture; and sometimes there is transient delirium. In the earlier stages, and in some cases through a great part of the course of the disease, the symptoms suffer remarkable remissions, so as to deceive a superficial observer in regard to the real nature of the disease, and often to make it be considered as periodical headach, sick headach, or headach connected with dyspepsia. The latter supposition is countenanced by the stomach being frequently much disordered, and the more violent attacks being often accompanied by vomiting. The diagnosis is sometimes difficult, but, by attention, it may generally be made with

tolerable precision. The long duration and violence of the pain will lead to a suspicion that the complaint is something more than common headach; and though the stomach is at times much disordered, it will be found that the complaints in the head do not keep pace with the state of the stomach, but that they are often most severe when no disorder that can account for them exists in the stomach. The patient generally cannot bear a warm room, the noise of company, or the exertion of cheerful conversation, without being distressed, and his headach increased. The same effect is produced by wine and all bodily exertions. He seeks quietness, coolness, and darkness. In these respects the disease differs from dyspeptic headach, which is usually relieved or dissipated by activity and cheerful company. Sometimes the paroxysms are accompanied by vomiting, and sometimes by violent throbbing in the head. If, along with these severe local symptoms, the face be pale and the pulse feeble, as is often the case, and the whole appearance indicating the reverse of plethora, organic disease may be suspected. In many cases, however, the diagnosis is extremely difficult; and it is only by the severity of the pain and its obstinate resistance of the most powerful remedies, that we come to suspect the nature of the disease. I have already alluded to a remarkable modification of this form of the disease, (exemplified in case 1st,) in which extensive organic disease seems to exist for a considerable time without producing any urgent symptoms until a short time before death. The symptoms which then appear seem to be rather connected with an attack of chronic inflammation than to be immediately dependent upon the organic disease.

The terminations of the cases of this first class will appear from the examples. They may be fatal by coma with or without convulsion; suddenly by convulsion; by gradual exhaustion without either convulsion or coma; or, while the affection is going on, the patient may die of another disease.

The description now given of this first form of the disease applies more or less to all the other forms; they differ from it chiefly in the addition of other symptoms, which make the nature of the complaint much more distinct, and it is in the character of these additional symptoms that they differ from one another.

II. In the second form, after some continuance of fixed uneasiness in the head, such as has now been described, the organs of sense come to be affected, and frequently the intellect. Every sense may be affected; most commonly the sight; frequently the hearing, sometimes the taste, and occasionally the smell. The loss of vision generally takes place gradual-

ly; the sight being first obscure, so that the patient sees dimly as through a mist, or with the outlines of objects ill defined; and after some time this terminates in blindness. One eye generally is first affected in this manner, and some time after it has become blind, the other begins to see indistinctly, and gradually becomes blind also. When both eyes are affected at once, the one is often affected in a greater degree than the other; the one pupil perhaps being observed dilated and immoveable, while the other appears much more healthy. One remarkable case will be mentioned, in which the blindness took place rather suddenly, and in which, some time after it had taken place, sight was restored under the action of an emetic, continued distinct for an hour, and then was lost for ever. In some cases double vision occurs, and it may either be permanent, or may occur only at intervals. In many cases of this class the intellect is impaired, and sometimes the speech is lost. In their terminations they admit of the same varieties which have been mentioned in regard to the former class. The morbid appearances present no uniformity. In two of them there were tumours so situated as directly to compress the optic nerves; in another a large tumour pressed upon the corpora quadrigemina; in a third, the disease was seated at the lower part of the anterior lobe; and in case 12th, in which the right eye only was affected, it was in the substance of the left hemisphere, near the posterior part. In one by Drelincurtius, the disease was an enlargement of the pineal gland, and in another, in which there were both blindness and deafness, a large tumour was seated between the brain and cerebellum.

III. The third class corresponds with the second, in the pain and affections of the senses, with the addition of paroxysms of convulsion. These may occur with some degree of regularity like epilepsy; but in other cases they only occur at particular times, when, from causes which elude our observation, the disease seems to be aggravated and combined with an inflammatory tendency, (case 13th.) In case 19th the paroxysms had a resemblance to tetanus. In case 21st they rather resembled slight apoplectic attacks. In this case there was loss of sight, hearing, smell, and speech, and at last of the power of deglutition.

The cases of this class present the same varieties of morbid appearance as the former; no diversity appears in them that can account for the difference of symptoms betwixt the second and third classes; and when we compare both these with the first class, nothing appears to explain the remarkable differ-

ence in the symptoms, except in those cases in which the disease was so seated as immediately to compress the optic nerves. This seems invariably to produce blindness; but in the other cases it will appear that tumours similarly situated, and nearly of similar size, were, in some cases, accompanied by blindness and convulsion; in others, by blindness without convulsion; and in others, by pain without either of these affections. On what these remarkable differences depend, remains to be investigated by extensive and accurate observation. Case 18th is remarkable from the circumstance, that the convulsions ceased when the lungs became diseased, and did not return; the affection of the lungs being fatal.

IV. The fourth class is distinguished by convulsion, without any affections of the senses. In many of the cases there is little complaint of pain; and, in general, there is not that fixed and constant pain which occurs in the other classes. The convulsion in some cases occurs under the usual form of epilepsy; in others, in more irregular attacks, occurring repeatedly for a short time, and then ceasing for a considerable interval. Sometimes violent paroxysms of headach precede or accompany the attack of convulsion. After some time the memory is generally impaired. These cases may be fatal suddenly in one of the fits, or by coma of some days continuance. The morbid appearances, as will be seen from the cases, are various. A tubercle in the cerebellum,—an hydatid in the right hemisphere of the brain,—induration of the pons Varolii, or of the substance of the brain,—tumours and bony spiculæ in various parts of the brain, are the most remarkable. An important variety of the disease occurs in which the convulsion is confined to one side of the body. Two cases of this kind are referred to; in one of which there was a tumour on the surface of the opposite hemisphere; and in the other, a portion of the opposite hemisphere was indurated. The former case was also remarkable from the long continuance of the disease, and from the weakness and diminution of size of the lower extremity of the affected side.

V. & VI. The fifth and sixth classes lead our attention to a new set of symptoms,—the paralytic. These may occur in the form of hemiplegia, paraplegia, or paralysis of all the parts below the neck. In some cases one limb only is affected. The disease is distinguished from the ordinary apoplectic paralysis by the affection coming on gradually,—one limb, perhaps, or part of a limb, being first weak, and the weakness extending by degrees over that limb and the corresponding one, and increasing very gradually till it amount to paralysis.

In one of the cases the paralysis was preceded by violent pain in the limb. In other respects the cases of this class may resemble several of the other classes. There may be fixed uneasiness in the head, or there may be headach occurring in paroxysms. The speech is generally affected, and in many cases the memory. In one case there was blindness of one eye; in another, of both. In one there occurred convulsion, but not till an advanced period; in another, epilepsy for more than a year.

The dissections exhibit tumours or indurations variously situated; in the cases of hemiplegia, on the opposite side of the brain; in those of paraplegia, in the cerebellum or tuber annulare. In a remarkable case (33) of universal paralysis, with the mind entire to the last, the tumour was in the posterior part of the left hemisphere; in another, in which the disease was on the tuber annulare, there was first hemiplegia, which was recovered from, then paraplegia, and at last universal paralysis. Extensive effusion occurred in several of them. This is probably to be considered as an effect of the disease.

VII. The seventh class presents to us a subject of much interest; a train of symptoms which are very apt to be referred to the stomach, but which really depend upon disease in the brain. In many of the cases of organic disease the stomach is affected, but those to which I now allude are remarkable from the affections of the stomach being the most prominent symptom, and from there often being, through a considerable part of their progress, but little complaint of the head, or no complaint there so fixed and urgent as to direct our attention to the brain as the seat of the disease. There is generally, however, in these cases, some complaint of pain or weight in the head, sometimes occurring in paroxysms like periodical headach, or in paroxysms accompanied by vomiting, like what is called "sick headach." The pain is increased by exertions, external heat, passions of the mind, and stimulating liquors. There is generally variable appetite, bad sleep, oppression of stomach, acidity, and occasional vomiting. The vomiting sometimes occurs in the morning on first awaking, and sometimes it occurs at uncertain periods, and without any warning, occurring so rapidly that a patient will sometimes discharge the contents of his stomach upon a book which he is reading. There are various uneasy sensations, which are sometimes referred to one organ, sometimes to another; and the disease has been often ascribed to derangement of the functions of the liver, or disordered action of some of the

chylopoietic viscera. In this manner the case may go on for a considerable time before its real nature is fully ascertained. After some time, however, symptoms begin to appear which point out its dangerous character, such as fits of loss of recollection, affections of sight, convulsive paroxysms, and in one of these death may occur, in some cases unexpectedly, in others preceded by a train of severe suffering. In cases of this class we must beware of being misled in regard to the nature of the complaint, by observing that the symptoms in the stomach are alleviated by attention to regimen, or by treatment directed to the stomach itself. If digestion be impeded, from whatever cause, the uneasy symptoms in that organ may be alleviated by great attention to articles of diet, but no inference can be drawn from this source in regard to the cause of the derangement. In the earlier periods of these cases the diagnosis is often difficult. There is generally more fixed and permanent uneasiness in the head than we should expect to find in a dyspeptic case, and the uneasiness is increased by causes which would probably be beneficial to a dyspeptic headache, such as activity or cheerful company. The uneasiness in the head, also, is not regulated by the state of the stomach; but may be most severe, when from circumstances we have reason to believe the stomach to be in good order.

The morbid appearances connected with this class are various. The most remarkable in the annexed cases were in the cerebellum.

VIII. The eighth class is distinguished chiefly by those slight and transient apoplectic affections which I have alluded to when treating of apoplexy. I have formerly given several remarkable examples of these, connected with organic disease in the brain, and shall in this part of the subject add several more, illustrative of the different forms of the disease. In some cases it consists chiefly of an habitual giddiness, which makes the patient afraid to walk alone; in others there are sudden attacks of loss of all muscular power, which are soon recovered from and without loss of recollection. Sometimes there are attacks of perfect coma, which may occur at regular or at irregular intervals; the patient in some cases having such warning of their approach, that he lies down and immediately becomes comatose. There is usually more or less unsteadiness of the limbs, and generally, but not always, headach. In some cases there are affections of sight, and these may be either permanent or may occur in paroxysms. Sometimes urgent symptoms, such as giddiness and loss of recollection, are excited by bodily exertions, and go off on desisting from

them. I refer to a former dissertation on apoplexy for the doctrine which I have proposed in regard to the pathology of these affections.

SECT. II.—OF THE NATURE OF THE ORGANIC DISEASES OF THE BRAIN.

The various forms of disease which have now been described are found to be connected with a great variety of morbid appearances in the brain; but much observation is still wanting in regard to the minute characters of these appearances, and the connexion betwixt particular forms of them, and particular varieties of the symptoms. The following are the most prominent appearances.

I.—Tumours formed by circumscribed depositions of coagulable lymph on the surface of the brain. These, I think, are generally formed under the dura mater, and they may be found in various steps of their progress, from recent depositions of a gelatinous appearance, to more firm and organized masses. In case 16th, of the first part of these essays,* I have described a remarkable tumour, formed by deposition of this kind, between the laminæ of the dura mater; and in different parts of that tumour, the different steps in its formation were distinctly traced, some parts of it being in the state of clear recent gelatinous matter, others firm, dense, and opaque. In a case quoted from Lancisius, in the second part,† a tumour, which was probably of this kind, occurred under the frontal bone; and there is another example of it in a case of epilepsy, from M. Poupert, referred to under that head in this paper. It is described as a thick, white substance, harder than jelly, under the dura mater. This affection probably proceeds from a state of chronic inflammation of a part of the dura mater, and is commonly accompanied by thickening of that membrane, at the part which covers the deposition.

II.—A very dense tumour growing from the dura mater, externally and internally of a uniform white appearance, like coagulated albumen. This does not appear in irregular masses like the former, but in distinct rounded tumours of various sizes. I have described one that grew from the falx, which was nearly five inches in circumference. They do not ap-

* On Chronic Inflammation of the Brain and its Membranes, *Edinburgh Medical and Surgical Journal*, Vol. XIV. p. 291.

† Ibid p. 577.

pear to be covered by any sac, but to be a production from the surface of the membrane. The large one which I have now referred to, had, when analyzed, the properties of coagulated albumen. It was uniformly white and firm, and did not appear to be organized. The tumour growing from the tentorium in case 9th had nearly the same external appearance, but internally it was of a reddish colour, and appeared to be organized. The symptoms connected with tumours of this kind will be seen from the cases to be very different in different cases. Sometimes they arise from the outer surface of the dura mater; in this case they have frequently been known to produce absorption of the bone, and have been found rising externally under the integuments, so as to be mistaken for wens. I have given an example of this kind of tumour in case 25th. Many others are mentioned by the French writers.* In many of them the disease seems to have been originally induced by injuries; and in others an injury seemed to have accelerated the process of caries by which the tumour was making its way through the bone. When these tumours have been rashly meddled with by incision, death has generally been the consequence.

Small tumours which resemble those of this class are sometimes met with attached to the choroid plexus. I have seen one in each lateral ventricle the size of small hazel nuts in a man who died suddenly after having had repeated epileptic attacks at long intervals, and having been for some time affected with symptoms threatening apoplexy. Dr. Baillie has delineated a similar appearance in one of his engravings.

III. A tumour on the surface of the brain, and distinct from the cerebral substance, inclosed in a sac, and with a slight attachment to the surrounding parts. Tumours of this class lie under the dura mater, and the sacs of them seem to be derived from the arachnoid membrane, or the pia mater. The structure of them is variously described; some are compared to a scrofulous gland; others are said to be of a fatty appearance; others are reddish and more distinctly organized. They may be found in a state of suppuration, as in case 10th. They probably originate in enlargements of the small glandular-looking bodies which are found on the surface of the brain. They vary in size, and are sometimes met with as large as an egg.

IV. Particular parts of the brain in a state of enlargement, as the pineal gland in case 6th, the pituitary gland in case 10th.

* See Mr. John Bell's *Principles of Surgery*, Vol. II. p. 396, et seq.

V. Morbid changes in the substance of the brain or the cerebellum. I have formerly proposed an opinion, that the diseases which come under this head are the result of chronic inflammation affecting a small part of the brain; and I have endeavoured to trace its progress from the state of simple inflammation to that of induration and final suppuration, in which it often terminates. In its early stage I believe it is a disease that may be cured, and that it may continue a considerable time in this state,—that after a certain time it passes into induration, and that probably there is in some cases formed around the indurated portion, a sac of coagulable lymph. In this state it may continue for a long time producing urgent symptoms, and may at last be fatal by passing into suppuration, or without having suppurated. According to the stage of its progress, therefore, in which death takes place, we may find a portion of the brain in a state of recent inflammation, or indurated, and of a red or yellowish colour; or we may find a part of it hard and a part suppurated; or we may find the diseased part entirely suppurated. The simple induration we find chiefly when the patient dies of some other disease. When the disease itself is fatal, it is generally by a fresh inflammatory action, and thus the indurated part often passes into suppuration. We find, accordingly, in such cases, other marks of the inflammatory state, as deposition of coagulable lymph and serous effusion. The symptoms attending this form of the disease, both in the brain and cerebellum, will be seen from the cases. The striking distinction in the appearances is betwixt simple induration of the cerebral matter and tumours imbedded in the substance of the brain. The term tumour seems to have been by many applied to both, so that there is a great want of precision on this part of the subject. That which is properly called a tumour in the substance of the brain, perhaps should have a sac by which it is separated from the cerebral matter; and it remains to be investigated whether such a tumour is a portion of the brain in a diseased state, and around which a sac of coagulable lymph has been formed by an inflammatory process, or whether a distinct tumour may be formed in the substance of the brain of the same kind as those which are formed on the surface.

VI. Ossifications. Under this head are to be included both osseous projections from the inner surface of the cranium; and internal ossifications, which are commonly formed in the dura mater, most frequently in the falx. An example of the former kind occurred in case 16th, connected with head-ach, convulsions, and blindness; and another, in a case quoted

from Mr. Gooch under the 8th class, in which there were frequent attacks of an apoplectic appearance combined with a convulsive affection resembling emprosthotonos. The internal ossifications usually appear in the form of thin laminæ of bone in the substance of the dura mater, most commonly in the falx, where they are sometimes found of considerable thickness. Of such ossifications there are many examples on record; some of them in cases in which the patients had enjoyed good health until cut off by some incidental disorder; others in which there had been urgent symptoms distinctly referable to the brain; and others in which there had been a long train of obscure complaints, and no other morbid appearance but these ossifications were met with on dissection. The latter cases were chiefly affections of the stomach, with some headach; and some examples of it will be found under the 7th class of cases. It is probable that ossifications produce urgent symptoms in the brain, when they are in the form of sharp spiculæ, or have acute angles, which are so directed as to irritate the brain or the membranes. An example of this occurs in case 8th, in which a part of the dura mater, which was in contact with an angle of the ossification, was evidently inflamed. Another, connected with epilepsy, is quoted from La Motte under the 4th class of cases, in which there were bony spiculæ directed against the pia mater; and a third, from Van Swieten, under the same class, in which there was in the substance of the cerebellum an irregular piece of bone, an inch long, and half an inch broad.

VII. *Hydatids*. This name has been applied to several appearances in the brain, some of which do not appear to be really hydatids. Of this kind are the vesicles which are frequently met with in the choroid plexus; they seem to be merely the loose cellular texture of that organ elevated into vesicles by watery effusion. In a case by Dr. Baillie they could be injected from the veins. Real hydatids, however, seem to occur in the brain, as in a case quoted from Zeder, under the 8th class, in which there were numerous hydatids, one, particularly, the size of an egg, which contained three smaller hydatids within it. There are many examples of cysts in various parts of the brain, containing a watery fluid, but it is doubtful whether they are to be considered as hydatids. A cyst of this kind occurs in case 21st, and another in case 23d, in which the fluid was yellowish, and partly gelatinous. A woman mentioned by Bonetus, after a blow on the back of the head, had headach for a year, with constant vertigo, and then died apoplectic. In the substance of the

left hemisphere there was a cyst the size of an egg, which contained a clear fluid. (Boneti Sepulchretum, Vol. III. p. 319.) In a priest who had become stupid and died apoplectic, there were found certain round bladders full of a pituitous fluid above the corpus callosum. (Ib. Vol. I. p. 258.) In a girl, mentioned by the same writer, who died on the 12th day of a febrile disease which ended in coma, there was found, on separating the two hemispheres, a cyst which burst on a slight touch, and discharged limpid fluid to eight or nine ounces. (Ib. p. 172.) Bonetus mentions other cysts of a much larger size, one especially, attached to the nates and the infundibulum, which burst on taking it out, and discharged fluid to the amount of lb. ij. The patient had complained of fixed pain in the vertex for four months. I was long inclined to doubt the accuracy of these accounts, and to suppose that, in such cases, the fluid had been really contained in the ventricles, until I received, through my friend Mr. Frampton, the remarkable case by Mr. Headington, (No. 29,) in which an hydatid or cyst was found in the left ventricle that contained xxvj. of fluid.

I think it probable that some of these watery tumours are formed by effusion betwixt the laminæ of the membranes, or in cysts formed by doublings of the pia mater, connected with an inflammatory process. The possibility of such an occurrence appears from the case of a boy mentioned by Mr. Paisley, who had fixed pain at a particular spot on the left side of the head, followed by coma, and died in 12 days. There was much effusion and other morbid appearances in the brain; and on the surface, exactly corresponding to the seat of the pain, there was a tumour the size of a large hazel nut, formed by a separation of the laminæ of the dura mater, and the deposition between them of a bloody serous fluid. (Edinburgh Medical Essays, Vol. III. p. 265.) In case 12th I have described a singular cyst found in the substance of the left hemisphere, full of a pure albuminous fluid.

Several tumours are mentioned which do not belong to any of these classes; the stony tumour, for example, in case 5th, and in the case quoted from Schenkus; the bloody tumour of Rochoux in case 28th, and some others. Of these little is known; the latter, perhaps, was of the nature of fungus hæmatodes. An affection of this kind has been observed in the brain, and fungous protrusions from the substance of the brain. These are familiar to us after the operation of trepan, but may also occur without any injury. A man mentioned by Dr. Donald Monro, had a pulsating tumour above the left

eye-brow, pressure on which produced headach and giddiness. He could give no account of the origin of it, but that he first observed it six months before, and it was then two fingers breadth in diameter. It increased in size, and after seven months he died lethargic. On dissection the tumour was found to arise from the anterior part of the left hemisphere of the brain, and to have made its way through the frontal bone. It was the size of a China orange; its structure resembled the medullary substance of the brain, and it appeared to be covered by the dura mater. (Trans. of the Coll. of Physicians, l. 353.)

CASES AND ILLUSTRATIONS.

SECT. I.—FIRST CLASS.—Long continued headach, terminating at last by coma, or by gradual exhaustion, or the patient dying of some other disease.

1. A boy, aged 7, had been for more than a year affected with scrofulous sores, and during that time had been in a declining state, without any urgent symptom, till six weeks before his death, when he began to complain of pain of the abdomen, and a fixed and severe pain of the forehead. His pulse was natural, but his appetite was bad, his tongue foul, and his sleep disturbed. The pain of the belly was removed by purgatives, but that of the forehead continued very severe, so as sometimes to occasion screaming. The usual remedies having been employed, the pain was much alleviated, and for a fortnight he made little complaint. The headach then returned with much severity, and, without any other change in the symptoms, he gradually sunk into coma, and died in three days. *Dissection.*—Much fluid in the ventricles, and the substance of the brain in several places very soft and much broken down. A large firm white tumour adhered by its base to the middle of the falx at its lower part on the right side. It was nearly five inches in circumference at the broadest part, and about an inch and a half in thickness. Internally it was uniform, white, and firm, like coagulated albumen. It was imbedded in the substance of the right hemisphere where it had formed a depression for itself, but without any adhesion to the substance of the brain. Its attachment to the falx was at the very lower part, and part of the tumour descended lower than the edge of the falx. There were two smaller tu-

mours the size of hazel nuts, but of the same appearance, attached to the falx, one at its posterior and the other at its anterior extremity, both on the right side; and a fourth, also small, imbedded in the anterior lobe of the left hemisphere, and attached by a slender filament to the pia mater.

2. A boy, aged 14, affected with scrofulous disease of the knee, was seized with severe headach, which continued without any other symptom for two months. He was then seized with convulsions, followed by coma, and died on the 8th day. *Dissection.*—Serous effusion both in the ventricles and on the surface of the brain. Behind the posterior part of the medulla oblongata, there was a tumour the size of a walnut, of a rose colour and a fatty consistence, intersected with red lines. It was inclosed in a thin sac, and adhered very slightly to the neighbouring parts. There was another of a smaller size in the substance of the left lobe of the cerebellum. The mesenteric glands were enlarged, and the small intestines in several places ulcerated. (*Edinburgh Journal*, II. 405.)

3. A man, aged 35. *Symptoms.*—Consumptive complaints and scrofulous sores; violent headach, which was sometimes so severe as to oblige him to remain for a considerable time in one posture, the slightest motion aggravating it to perfect torture. In this state he continued seven months, and then died of complete marasmus, without any change in the head symptoms. *Dissection.*— $\frac{3}{4}$ ij. of fluid in the ventricles of the brain; a firm tumour the size of a pigeon's egg at the upper and middle part of the right hemisphere. It was inclosed in a reddish sac, and was internally of a yellowish colour. A larger tumour of the same appearance in the left lobe of the cerebellum. Extensive disease of the thorax and abdomen. (*Ib.* 406.)

4. A woman, aged 50. *Symptoms.*—Violent and constant pain under the sagittal suture for six months; then a lethargic state from which she recovered, the pain continuing as before for three weeks, when the lethargy returned, and was fatal. *Dissection.*—A tumour three inches broad, adhering to the membranes by the side of the third sinus; (the left lateral sinus?) effusion in the brain both externally and internally. (*Willis, An. Brut. Pars II. Cap. 2.*)

5. A noble lady. *Symptoms.*—Long continued headach, varying in degree, sometimes occurring in paroxysms which obliged her to scream and grasp her head with both her hands, the pain being such as if a sharp instrument were driven through her head. She died of dropsy. *Dissection.*—Under the dura mater, near the torcular, there was found a hard, rough, irregular mass of a stony consistence, (*lapideam*;) with

many sharp processes and angles. It adhered firmly to the dura mater. (Borellus, App. Obs. xv.) A similar case by Schenkinius, I. 113. A stony tumour like a mulberry in the brain of a man who had suffered from long continued and intense headach, which left him no interval of ease day or night.

6. An officer, aged 33. *Symptoms*.—Slight pain or confusion of head, with impaired appetite. After ten weeks nausea and pain in the balls of his eyes, especially when he turned them to either side. He was then wounded in the head; lost much blood; bone exfoliated, then healed. He was better for more than a year; was then attacked with headach, watchfulness, flushing, and ophthalmia. Recovered after three months, and was able for his duty, but never free from headach. It gradually increased; was sometimes referred to a spot on the occiput, and sometimes through the whole head. Was aggravated by motion, which produced a painful jarring in his head, and very much increased by going to stool. Pulse from 80 to 90. Pain at last became excruciating, with numbness of the left hand. Became suddenly delirious, then comatose, and died, having been confined to bed but three days. Whole duration of the complaint three years. *Dissection*.—3iij. of fluid in the ventricles. In the seat of the pineal gland, a little to the right side, there was a firm tumour, the size of a nutmeg; internally it was like cheese, but organized. Cerebellum very soft and broken down. (Trans. of Soc. II. 198.)

7. A young man, of 19 or 20, had violent pain in the forehead. It occurred in paroxysms, which generally continued four days, and were followed by intervals of partial relief of about the same duration. After two years he died suddenly in the night, in convulsion. *Dissection*.—In the substance of the cerebellum, there was a tumour the size of a pigeon's egg, hard in the centre, and externally soft. All the other parts healthy. (Planque, Biblioth. III. 348.)

8. A man, aged 35, had been for a year affected with so violent a pain in his head that he sometimes lost his reason. *Dissection*.—Under the junction of the lambdoidal and sagittal sutures, there was at the broadest part of the falx a small triangular piece of bone with very sharp angles. Where these angles came in contact with the dura mater, it was livid, and discharged a little pus. There was effusion in the ventricles. (Saviard, Chirurg. Obs. vi.)

Observations on a Means for preventing Cancerous Degeneration in Schirrous Congestion in the Breast. By M. le Professeur HALLE.

[From the *Nouveau Journal de Médecine*, June 1819.]

THE congestions of which I speak, consist in indurations, more or less considerable, comprised in the substance of the breast. Sometimes they form a round and unequal tubercle, extremely hard in its centre, round which a congestion takes place in the cellular tissue; which congestion is firmer in proportion to its nearer approach to the centres occupied by the primitive congestion. Sometimes these tubercles have been disseminated in a granular form, of the size of hemp-seed, more or less connected and grouped together, but always very hard. The surface of the skin over the seat of the tubercles, is a little depressed; the sub-cutaneous tissue appears to be contracted; and the tissue even of the skin at length adheres to the centre of one or more tubercles, and becomes thinner in this place. In this point, not particularly painful on pressure from the finger, lancinating pains are felt, as if the part were pierced by an awl; they return after divers intervals, and gradually become more frequent. Firm and sensible cords often seem to extend from the seat of congestion in the breast towards the axilla, the rest of the breast remaining supple and free.

We cannot doubt, in these cases, what their termination would be sooner or later, if the disease were abandoned to itself.

Having seen many of these tumors, in circumstances which would not permit me to expect from the operation but an ephemeral success, with almost a certainty of relapse, I have resorted to the following mode of treatment:

I had a poultice made of linseed-meal, often mixed with the pulp of carrots, and then moistened with the expressed juice of carrots. The poultice having been prepared, and very hot, I added to it a little lard, (half an ounce to a poultice intended to cover the breast,) to render it unctuous, and to prevent it becoming too soon cold, and drying and adhering to the skin. At the instant of its application, I covered the poultice with from half an ounce to an ounce of the powder of hemlock, which was mingled with the surface of the poultice intended to come in contact with the skin.

This poultice was kept applied during six hours in the day; it was then renewed. I had it also applied in the evening, to remain on all night. Sometimes I have it used only at night.

I have very often been content with this linseed-poultice, always moistened with lard, and covered with the cicuta powder.

The lancinating pains have constantly ceased after a few days. The congestion surrounding the hard centre, has disappeared by resolution. The centre has appeared to me to diminish in hardness and extent; sometimes it has seemed to dissipate itself; but it is well known that we must not flatter ourselves with the expectation of entirely resolving the hardness of a part that is disorganized. The progress of the disease has, however, been at least arrested, and its degenerescence, I hope, indefinitely adjourned. I could adduce six very striking examples of this success.

It has occurred to me, to be consulted respecting an ulcerated cancer, established on an extensive tumour, adherent, and consequently not at all proper for the operation. The edges of the ulcer formed hard welts, and were the seats of new darting pains, which announced the further extension of ulceration. I had the poultice just described applied. It is certain that the darting pains have ceased, that the hard welts have become soft, and subsided, that the surface of the ulcer has assumed a better colour, and that the suppuration is no longer ichorons. But, as the cancer was accompanied with deep-seated pains darting into the chest, notwithstanding the amelioration of the external cancer, the internal pains have continued, and perhaps increased. I do not believe that this disease can have a fortunate termination. I have since learned that the internal disease continued its progress.

I can however assert, that, in a pulmonary affection, the progress of which was slow, in which hemoptysis to a great extent was frequently renewed, which had been preceded by the external signs of a cancerous disposition, and which was accompanied by lancinating pains, that seemed to indicate the same disease as the cause of this phthisis, the internal use of the *powder of cicuta* (and not the extract, although prepared in the manner directed by Storck,) has appeared to moderate the pains, and prolong the issue of the malady beyond the period at which it would otherwise have been fatal; that is to say, for several years, and with alleviation.

I have then, in general, advised, both externally and internally, the *powder of cicuta*, in preference to the extract. Internally, I have always given it in progressive doses, commencing from eight to twelve grains, and increasing this dose daily until it produced some degree of vertigo, which has commonly taken place when the dose has been carried to

twenty grains: I then diminished the dose two grains; and I continued it in this quantity during from eight to fifteen days, again assuming the increasing progression, and constantly following the same method, to an almost indefinite extent.

I often add *camphor* to the powder of *cicuta*, to prevent the vertigo, and the narcotic, which are often joined with the other effects of this remedy.

This method of employing *cicuta*, both externally and internally, has succeeded with me in chronic and obstinate cases of neuralgia: but the success obtained in the first attacks of these pains, is not always sustained in the recurrences of them.

As I have not regarded the use of *cicuta* as a new thing, since its advantages had been already stated by some illustrious practitioners, I have only spoken to my colleagues of the method which I have described, in circumstances where its employment appeared to me to be appropriate; seeing nothing remarkable in it, but the extent to which I carried its application; the perseverance I have given to it; the exclusion of other means, except those which accidents sometimes require,—as general or local bleedings; and, lastly, the preference which I give, whether externally or internally, to the powder over the extract, however prepared; for the doses with which the sensible signs of its action are manifested, marked by vertigo, especially when it is used internally, and by the extinction of pains when applied externally, may thus be easily appreciated, and even calculated, and give to the administration of this remedy a very advantageous means of precision.

This method appears to me to have also the advantage of isolating the peculiar effects of an active, but too often neglected, and even forgotten or despised, remedy, from the want of having been employed in a proper manner.

Case of Vaccination terminating fatally.

[Communicated by E. E. Lucas, M.D., Hatfield.]

THE following case, in which vaccination was followed by a fatal termination, will, I doubt not, prove sufficiently interesting to claim insertion in the REPOSITORY.—C. C., son of the Rev. Mr. C., aged seven months, having been in perfect health from the day of his birth, was vaccinated, June 26th, with lymph obtained from the National Vaccine Establish-

ment, and as also appears; by particular inquiry since made, from an unexceptionable subject. Two punctures were made in each arm, all of which, except one on the right arm which missed, put on the most favourable appearance, and at the end of the eighth day afforded as perfect an example of the disease as could be seen: at this time one of the vesicles on the left arm was punctured without drawing blood, and lymph taken, with which two elder children of Mr. C. were re-vaccinated, after an interval of some years, to afford a test of their security. On the following morning an areola of inflammation, of the usual extent and appearance, surrounded the vesicles, and in the evening the child was taken rather suddenly ill with fever and uneasiness, with a slight expression of straining. The arm was not again examined till the next morning, the tenth of the disease, when the inflammation extended from the shoulder to the wrist, considerable fever being present. Cold rose-water was applied to the limb, and the child was purged well with calomel, antimonial powder, and rhubarb. On the following day the inflammation had spread over the left breast, top of the shoulder, and shoulder blade; pulse very rapid, about fifteen strokes in five seconds; and the child lay in a quiet, half comatose state, but crying much when disturbed; he, however, took the breast very freely, and occasionally a little gruel. The purgative was repeated with effect, and a warm lotion applied with three parts of the liq. ammon. acet., one part of alcohol, and four parts of water. On the twelfth day, the inflammation having somewhat abated, the lotion was laid aside; but increasing again considerably in extent and intensity on the thirteenth, it was resumed. From this time the inflammation continued to extend itself, gradually receding from the parts first attacked, until it successively covered the whole body and limbs, except the feet, and upper parts of the face and head; a degree of œdema following it particularly affecting the scrotum and lower limbs. The bowels were kept open by the magnes. sulph.; from six to twelve daily evacuations were procured through the whole course of the disease; these were greenish, curdly, and somewhat slimy, but not differing materially, as the mother said, from the usual evacuations of the child. The pulse continued rapid, never under twelve or thirteen strokes in five seconds; but the child continued to suck freely, and to take gruel at intervals, expressing little uneasiness, except when moved. The symptoms continued in this state until the seventeenth day, when sickness came on, with some fulness of the belly; and on the morning of the eighteenth day the child died, with

every appearance of internal mortification. The abdomen being very tumid, with livid colour of the integuments in patches, and a great quantity of thin, dark coloured fluid being rejected, by vomiting, through the mouth and nostrils. The body was not opened; but there is, I think, every reason to believe, that the same inflammation, affecting the mucous membrane of the bowels, was the immediate cause of the fatal event; as the child had outlived the external inflammation, which, however, did not entirely disappear until within twelve hours of its death. At what time this internal inflammation made its attack, is uncertain, as there were no exclusive symptoms to point out its existence, but it is probable that it commenced with the first attack of fever. About three days before its death, the child took several little boats full of gruel with great avidity, probably from a sense of internal heat. The fatal disease was completely masked under the external inflammation, which had much the character of the roseola vaccina, as described by Dr. Bateman; the painful state of the surface accounting for the uneasiness, expressed upon movement of the body; whilst the open state of the bowels and exercise of the functions of the stomach, contributed to support the delusion. In similar cases, would it not be safer practice to abstain from all external applications, allowing the cutaneous inflammation to spend itself unchecked upon the surface, and using only the most diligent means to subdue the inflammatory excitement of the system?

That, in this unfortunate case, vaccination was the exciting cause of the disease which proved fatal, there can be little doubt; but as it must also be supposed that the violence of the inflammation depended rather upon some peculiar constitutional irritability of the skin, than upon any virulent property of the vaccine fluid, it is to be hoped that it will not operate as a check upon the practice of vaccination.

I will not trespass further than to state, that the fluid inoculated into the other children produced merely the usual, slight, suppurative inflammation, subsiding in a few days.

Lond. Med. Repos. Oct. 1819.

Case of Removal of a Middle Finger, &c. By JAMES MORRIS CHURCHILL, Surgeon, of Thames Ditton, Surrey.

THE diffidence I feel in presenting the following case and observations to my seniors in the Profession, is, I must confess, somewhat lessened by the kind solicitation of a gentleman

to make it public, who was present during the operation; who watched the progress of healing; and who is more capable than myself to judge of the probability of any paper being acceptable or useful; viz. J. H. Sprague, M. D., late Surgeon to the 95th Rifle Corps.

The operation itself, although of small magnitude, has been the means of perplexing many, if we are to credit the accounts which are on record concerning it: I refer to *the removal of a middle finger, together with the corresponding metacarpal bone.*

Mr. C. Bell, speaking of it, says: "When the Surgeon endeavours to dislocate the square head of the metacarpal bone, the patient is kept long in extreme torture, and the diseased bone is generally broken in the Surgeon's fingers. On one occasion, a patient (though certainly in a very unfavourable state of health,) died in consequence of the operation, from the immediate nervous irritation. Instead of dislocating the head of the bone, it is better to cut it with the trephine: I have adapted an instrument for the purpose. By cutting away one half of the cylinder of the trephine, it is made to saw the bone with the remaining half."

Extracts from Mr. Guthrie's work on Gun-shot Wounds:

"The metacarpal bone and fingers may be removed in two ways, by sawing the bones across, or dislocating them from their articulation at the carpus. Both these operations have been found extremely difficult and tedious; and it was in consequence of this, and the anguish suffered by the patient, that the *removal of the whole* has been occasionally practised in bad wounds of the hand. I have seen a Surgeon work for *twenty minutes* at two metacarpal bones, with the metacarpal saw provided for military Surgeons, to the unspeakable torment of the patient, and his own annoyance. If there be no wound of the hand, the best manner of removing the diseased bone would be as recommended by Mr. C. Bell, by a circular incision round the root of the finger, and continued down the back of the hand, when the diseased bone is to be dissected out. If the articulating heads must come out, a strong but thin scalpel is to be used, and pushed in between the bones, the ligaments being cut clear above, below, and at the sides. Care should be taken, in the efforts to get out the head of these bones, not to dislocate the other fingers, or to injure them as little as possible; and the cavity of the joint of the carpus should be covered by a flap, or flaps, if they can be obtained."

Elizabeth Couzens, *etat.* 52, a farmer's servant, applied to me, respecting a caries of the second metacarpal bone, where

articulated with the finger. The disease had existed six weeks, and first made its appearance by a pointing of matter at the lower and inner part of the middle finger. I am unable to say whether the latter was the cause or consequence of the diseased bone, but am inclined to lean to the latter opinion. A fistulous opening in the palm of the hand, pursuing the course of the flexor tendon, communicated with the knuckle joint; a fungous excrescence shot out at the orifice; and from the latter issued an ichorous discharge. The finger was double the natural size, accompanied with sloughing of the flexor tendon; and the whole hand assumed a very unhealthy aspect, being cedematous, and of a bluish red colour. Her health was bad, owing to the irritation caused by the pain necessarily attendant upon the disease; her nights being sleepless, and appetite depraved.

Previous to my removing the disease, I wished, if possible, to bring the hand to a more healthy state; for which purpose I ordered fomentations and poultices, together with an internal administration of bark and opium, to allay constitutional irritation. By pursuing this plan a few days, my wishes were accomplished; the health being improved, and the œdema having greatly subsided. The removal of the whole hand had been recommended to me by a gentleman whose advice I asked, and who had both seen and read of the difficulties attendant upon a removal either of the whole or a part of an inner metacarpal bone, as generally performed. To this advice I could not accede, when I reflected that it was the right hand of a poor woman who gains her living by the "sweat of her brow:" besides which, I consider that a Surgeon should never consult his own feelings in an operation, so as to suffer them to influence his steps to the prejudice of his patient. I resolved to remove the whole of the bones; but instead of making a transverse incision at the upper part of the hand, both above and below, and afterwards longitudinal ones, as recommended by Mr. Guthrie, I began an incision at the junction of the metacarpal bone with the os magnum; carried it down the middle of the former, as far as the knuckle; then diverged on each side of the finger into the palm of the hand. The hand was now raised, and an incision made on each side of the bone, nearly as far as where I began on the back, and so contrived as to meet in a point; care being taken not to wound the flexor tendons of the other fingers. The knife was carried obliquely through the hand, so as to make its appearance in the course of the first incision, which prevented the necessity of dissecting from the bone. By these means was the dis-

eased mass of flesh detached from the contiguous parts. I now cautiously depressed the bone, and with a small strong scalpel easily divided the tendons connecting the bone. There was no arterial bleeding after the tourniquet was removed, which rendered it unnecessary to take up any vessels.

The operation, including the time of dressing, did not take up more than twelve minutes. At first I thought that the removal of the mass of flesh from the palm of the hand would render an approximation of the parts more difficult; but this was not the case: and should I be called on again to perform the operation, where there was no occasion for removal of the soft parts from disease, still I should do it; the palm of the hand being rendered more *concave*, whereby the cicatrix is defended from the pressure which it would be continually exposed to, and so little adapted to bear: and, secondly, because I consider *the depression of the bone* necessary to the more easy extraction of it. Little constitutional irritation succeeded the operation; and complete adhesion had taken place at the end of three weeks.

From the above narration it will be seen, that as respects the operation, the mode of incision was varied; took up but little time, therefore not very difficult; and that it completely succeeded: for at the time I am now writing (six weeks after the operation) the motion of the thumb and fingers is gradually improving, the hand of a good appearance, and likely to prove very useful; so much so, that the woman retains her place, which she would have been incapable of doing had the hand been removed.

Lond. Med. Repos. Oct. 1819.

Abstract of a Report by Professor DESORMAUX, on the History of "a Case of spontaneous Cæsarean Operation from Gangrene; by M. BERTRAND, Surgeon at Méry-sur-Seine," presented to the Société Médicale of Paris.

[*Bulletin de la Faculté et de la Société de Médecine de Paris, 1819, No. iii.*]

Abstract of the History.—E. LAURENT, 40 years of age, having arrived within a fortnight of the completion of the ninth month of her eighth pregnancy, used some powerful exertions in loading a cart with manure on the 9th of July, 1811. During this effort, she suddenly experienced very severe uterine pains, accompanied with the escape of some water, and afterwards of blood, from the vagina. The pain and hæmorrhage ceased on the patient being placed in bed. This state of calmness continued until the 15th, when the abdomen became

tumefied, painful, and symptoms of the presence of inflammation were developed. No particular hardness or inequality in any part of the abdomen could be discerned. The heat of the vagina and lower part of the uterus, was somewhat different from that of the natural state. Towards the end of the month, symptoms of extreme debility succeeded this inflammatory state, and the patient seemed to be on the verge of death. At last, a red circular spot appeared between the naval and the pubes, which was soon converted into an eschar surrounded by a red circle which separated on the 13th of August, and gave vent to a large quantity of flocculent, puriform, and extremely fetid, fluid; and then to the decomposed body of a foetus, which appeared to be of the full period.

The severity of the symptoms soon disappeared; the strength of the patient was restored; the wound gradually diminished, and towards the end of September perfectly healed. Menstruation appeared four months afterwards, and has continued regularly ever since. It should be remarked, that, on the escape of the foetus, M. BERTRAND passed his left hand into the cavity of the uterus, which he could fully explore: and, carrying the fore-finger of the right hand into the vagina, he encountered with it that of the left, which had been directed towards the mouth of the uterus.

The following cases of *aberration of the menstrual evacuation in women*, have been published in the Bulletin de la Société du Département de l'Eure, and seem to be very important in their application to the opinion respecting the nature of the uterine flux that is becoming most commonly adopted. They are related by Dr. DE REYNAL.

A girl, aged 15, experienced suddenly, without any precursory signs, her first menstruation, which was abundant, but suppressed after a few hours by a fright. No consequent accident immediately happened; but, at the end of three weeks, a tumour appeared on the right side of the chest, in the situation of the middle of the fifth and sixth ribs. It suppurated and burst: on the following day an oozing of blood took place from the cavity of the abscess, and continued four or five days. From this time a bleeding took place from the same part every month, and the menses never re-appeared. At the age of 23, it was first suspended during the time of pregnancy, which then supervened. The woman has constantly enjoyed good health.

A woman, who had never menstruated regularly, had, at the age of 16, a slight hæmorrhage from the nose which continued to incommode her for three days, and then disappeared suddenly as it commenced. From that time the bleeding from the nose has been constantly renewed every month, except during the periods of pregnancy; and it did not cease till she was 42 years of age. The woman had been fourteen times pregnant, and enjoyed the most perfect health.

Lond. Med. & Phys. Jour. Oct. 1819.

Domestic.

CASE OF THE SHIP TEN BROTHERS.

HEALTH OFFICE, Boston, Nov. 29th. 1819.

THE committee appointed on the 30th of August last, "to investigate and state all the facts, relative to the ship *Ten Brothers*; while she was on the coast of Africa, on her return voyage, while she lay on quarantine ground, and after her arrival at this place—Also the conduct of the officers of this board, relative to their duty, in examining and cleansing said ship—Also any facts relative to the malignant disease, supposed to have been received from said vessel, &c."—Have attended to the duty assigned them; and having caused the depositions of the persons employed on board said ship *Ten Brothers*, on the aforesaid voyage, who survived, to be taken; thoroughly examined into the conduct of all the officers of the board, relative to the cleansing of said ship and cargo, and obtained all the information in the power of this committee, respecting the malignant disease, supposed to have been communicated by said vessel or her cargo, its origin, nature and effects. This committee now submit, for the consideration of the board, the following report, as the result of their aforesaid investigation, viz.—The ship *Ten Brothers*, with a cargo on board, consisting of N. E. Rum, Tobacco, Provisions of different kinds, cloaths, Hard-Ware, &c. her crew consisting of Joseph Mayo, Jr. master, Elijah Cobb, Esq. supercargo, Jonathan Thatcher, first, and Josiah Crosby, second mates.—Bates Lincoln, Joshua Myrick, John Dillingham, 3d, Elijah C. Crosby, and Richard Harding, mariners; William Johnson,

cook, and Godfrey Lincoln, boy ; sailed from this port, for the coast of Africa, on the 1st day of September, A. D. 1818. After a passage of about forty days, she arrived at the *Rio Gilhinas*, and commenced her trade with the natives, for ivory and gold dust, and continued her trade down the coast of Africa, as far as British *Accava*. Then proceeded to Prince's Island, at this place, Indian corn was received in exchange for other articles. The ship arrived at Prince's Island, the 19th of January, A. D. 1819—about the last of said January, and while said ship lay there, it began to be very sickly on board the shipping in the harbour.—The schooner *Hope*, belonging to Brewster, then lying there, lost her supercargo, Isaac Clarke, Esq. and others. On the 10th of February following, Joseph Mayo, Jr. master of the *Ten Brothers*, was taken sick and died on the 18th of said February, and upon that event, Elijah Cobb, Esq. took charge of the *Ten Brothers*, as master, himself, at the time slightly attacked with the fever, and the rest of the crew much alarmed, and enfeebled by the sickness prevailing among them. In this distressed situation, that very able, intelligent and accomplished commander, Captain Cobb, his cargo not being all disposed of, or his business closed, hired assistance, and immediately put to sea, to recruit his men, and allay their fears. And this committee, here, cannot refrain from observing, that in their opinion, to the prompt, wise and benevolent conduct of Capt. Cobb, in putting to sea, as aforesaid, in the manner he did, is owing (under the blessing of Heaven) the preservation of the lives of the principal part of his crew. Capt. Cobb left Prince's Island on the 20th of said February, visited the Islands of *St. Thomas* and *Annabon*, and returned to Prince's Island on the 19th of March following. On the 6th of the same March, Godfrey Lincoln, the boy, died. After the return of the ship to Prince's Island, E. C. Crosby and William Johnson, two of the crew of the said ship, were attacked with the fever, but recovered. On the 7th of May following, Capt. Cobb, having disposed of most of his cargo, and taken on board about 1800 bushels of Indian corn, and shipped John Whitefoot, in the place of John Dillingham 3d, who had taken charge of the schooner *Hope*, to navigate her to Boston, with the rest of his crew, who had survived the sickness, and none others, sailed from Prince's Island, touched at *St. Thomas*, and left that place on the 19th of May, for *Martinico*, all in good health. On his passage to *Martinico*, E. C. Crosby, from great fatigue, and a violent cold taken, during a heavy tornado they experienced, was taken sick, and languished until the 11th of

July following, when he died. Capt. Cobb, arrived at Martinico on the 29th of June last, disposed of his corn, and the rest of his cargo suitable for that market, at that place, took in some stone ballast, and sailed for Boston, on the 7th of July following. At the time the corn was taken out of the ship at Martinico, no apprehension was entertained by any one, that said ship was diseased, or that any malignant disorder could be communicated by her, or her cargo. On the 26th of July last, Capt. Cobb arrived with said ship on quarantine ground, in our harbour. After the last attack of the fever, on the crew of said ship at Prince's Island, Capt. Cobb caused six charcoal fires to be made in the said ship's lower hold, and between her decks; her hatches and dead lights being caulked in, and kept them burning 24 hours; and on his passage to Martinico, from thence to Boston, while on quarantine ground, and until he arrived at the wharf in Boston, he kept the ship's lower deck hatches, (three in number) always open, her upper deck hatches, one bow port, and cabin windows, open about seven eighths of the time, with two wind sails constantly up (the perishable articles having been stowed from under the hatchways) for the purpose of ventilating the ship in rainy weather. When Capt. Cobb arrived on quarantine ground, the aforesaid John Dillingham, 3d, came on board him, his crew then consisted of Jonathan Thatcher, Josiah Crosby, Joshua Myrick, Richard Harding, John Whitefoot, William Johnson, Bates Lincoln, and said Dillingham; and all the persons who died on board said ship during her said voyage, were, Capt. Joseph Mayo, Jr. Godfrey Lincoln, and Elijah C. Crosby. The representation of the state and condition of the said ship, her crew, voyage, and the disasters and sickness experienced, during said voyage, made by Capt. Cobb, to the Island keeper, assistant Physician, and quarantine committee, when he arrived, and while he remained on quarantine ground; were truly, fully, and fairly made. The said ship while at sea, and before her arrival on quarantine ground, leaked considerably, between two and three hundred strokes an hour, after her arrival at quarantine, she did not leak much, but she was pumped out every night and morning while she lay there. While at quarantine, no articles whatever, were delivered out, or taken from said ship, except such as were taken out for purification on the Island, by order of the assistant Physician of the board, and the same, when cleansed, were put on board again—and no person except the officers of the board of health, and a little son of Capt. Cobb's and the crew of said ship, were on board of said ship, while she remained on

quarantine ground. The ship remained on quarantine ground as long as the law, and regulations of the board of health, require vessels to remain similarly situated. Said ship was washed with vinegar, and every night fumigated in her cabin, and between decks, while on quarantine, and every cleansing and purification of said ship and articles on board, washed, in the most faithful manner, that has ever been thought to be necessary or proper, with vessels arriving at quarantine, similarly situated. It is true, that, had the board of health, their quarantine committee, or any officer of the board, known, or *had reason to suspect*, that the ship was a diseased ship, or her cargo, or articles on board her, infected, *to such a degree*, as to contain any malignant disease or subtle poison, which might be communicated to create sickness, it would have been proper for the Board of Health to have passed an order, directing said ship to have been unladed at the Island, and scuttled and sunk. But as the Board of Health, their quarantine committee, the assistant physician, or any other officer of the Board, and as this committee have reason to believe, Capt. Cobb, or the crew of said ship, had no knowledge or *reason to believe*, that said ship or cargo, or articles on board, were, *in such a degree diseased or infected*, the committee are of opinion and do report, that *no blame whatever* attaches to Capt. Cobb, or any of the crew of said ship, on account of the fatal consequences attending the arrival of said ship and her unlading her cargo, at the wharf in Boston, in the manner the same happened—and the committee, with pleasure, farther state, that the quarantine committee, assistant physician, and other officers of the Board, in all their conduct, relative to said ship and cargo, have acted faithfully, and with a proper regard to the preservation of the health and safety of the citizens.

The committee further state, that it appears from unquestionable evidence before them, that the voyage aforesaid of said ship Ten Brothers, although a disastrous one, was perfectly honourable and lawful—and that said ship was not engaged, either directly or indirectly, in the slave trade, nor were any slaves ever on board her. When Captain Cobb left quarantine ground, with the ship, his wife, two of his sons and a nephew went in the ship with him up to Boston; the ship laboured much, and the crew were wet and much fatigued, after leaving quarantine, and before they arrived at the wharf in Boston; on arriving at the wharf, Capt. Cobb, under the inspection of the late Mr. Eaton, one of the officers of the Customs, delivered from said ship, some articles of cloathing, being an adventure, belonging to Capt. Mayo, late master of

said ship ; and on Tuesday, the day before the said ship was unladed at the wharf, the late Mr. Daniel Badger received from said ship, a box containing brushes, and a handkerchief containing common slop clothes, that had been sent an adventure, and returned, in said ship. The crew of said ship did not assist in unlading her at the wharf, but they all slept on board her, on Sunday night, when she first arrived at the wharf, and on that Sunday and Monday following, they were all taken sick and left the ship, three of them died, during that week, after leaving Boston and two recovered. On Wednesday, after the said ship arrived at the wharf, and when unlading, a *white scum* was discovered on the bilge water in her lower hold, and an unusual stench from the water pumped out of her ; putrid corn was also discovered to be scattered in her timbers under her ceiling, but no information of these circumstances was communicated to the Board of Health for several days afterward. As soon, however, as the Board was informed of them, and that several persons who had been employed in and about said ship while she was unlading at the wharf, were attacked with a fever of a new and singular character, the Board proceeded immediately to examine the subject, and being satisfied that said ship was a diseased vessel, and that it was not safe for her to remain where she then was, without further purification, on the 11th of August last, passed the order, which was published, for scuttling and sinking said ship ; this order was immediately carried into effect, under the superintendence of the quarantine committee. And this committee have not been informed of a single case, of any person, who has taken the disease from said ship since she was first scuttled and sunk as aforesaid. Afterwards, several new cases of the fever appearing among persons who had assisted in unlading the ship, or received some of the articles that had been in her, and the alarm among the citizens being very great, the Board passed the order of the 17th August ; among other things, directing the removal of said ship to the opposite side of the channel, and again to be scuttled and sunk. This order was complied with, but the agitation of the public mind continuing to increase, and an unusual alarm existing respecting said ship, the Board, on further consideration, on the 23d of August, passed an order, which was also published, directing among other things, that said ship should be removed to quarantine ground, near Hospital Island, and there again scuttled and sunk. All these orders of the Board were faithfully carried into effect, under the superintendence of the quarantine committee, by the owners of said ship, with as much dispatch

as the nature and circumstances of the case would admit. And this committee avail themselves of this opportunity to state, that, although the owners of said ship were put to considerable expense and trouble in the different removals of said ship, under the orders of the Board, yet in all their conferences with the Board, and conduct respecting said ship, they manifested a proper regard to the safety of their fellow citizens, and an honourable disposition to obey the necessary orders of the Board, relative thereto. On a thorough examination into the nature, state and consequences of the sickness, proceeding from said ship, or her cargo, or articles on board her, this committee have no hesitation in stating, that in their opinion, said ship on her arrival at the wharf in Boston, was a diseased ship; and that some of the articles that had been on board her during her voyage, and were returned in her, were so infected as to communicate disease to such persons whose habit of body rendered them prepared victims for malignant disorders, but whether this disease originated from the putrid corn, and condition of the ship, or from subtle poison imported in her from the sickly climes of Africa, it is difficult, and perhaps impossible, to determine. Of the nature and character of the disease itself, the committee have not been able to obtain any definite and satisfactory information, whether a species of the *plague*, or of what class of diseases, remains at present in doubt. It was early discovered that although the disease was very malignant and fatal, yet it was not contagious; the committee have not been informed of a single case, where the disease originated from said ship, has been communicated by the diseased patient. The alarm among the citizens was very great and distressing, and the public excitement finds an apology in the unknown nature of the calamity. Yet it was much to be regretted, that public opinion, *for a time* was not more sufficiently regulated, by a confidence in the vigilance and exertions of those persons whose peculiar duty it was to watch over the health of their fellow citizens. "Diseases are Heaven's messengers," and, as in the case of the *Ten Brothers*, they will sometimes appear among us, when no human prudence or precaution can avert the calamity. This committee, however, have the high satisfaction of believing, that, although a few of their fellow citizens fell victims to the *destroying angel*, yet the unremitted attention bestowed to set bounds to the ravages of the disease and the destruction, or early and effectual purification of the articles infected, were honoured as instruments (*by Him, in whose hands our breath is*) to stay the march of death. This committee have been

thus minute and particular in their report, on the important subjects committed to them, from a conviction that the Board wished to be informed whether all had been done that could have been done, for the safety of their fellow citizens, respecting the misfortune of the arrival and unlading of that ill-fated ship in Boston. And also, that succeeding Boards of Health might consider "whether further restrictions on the commercial interests of our fellow citizens, ought to be imposed, to preserve the health of the town and country.

All which is most respectfully submitted.

BENJAMIN WHITMAN.

Published by order of the Board of Health.

JAMES ROBINSON, *Secretary*.

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TO CORRESPONDENTS.

"*Clinical Remarks*," by ABEL L. PEIRSON, M. D. have been received, and will appear in our next number.



Chelone Glabra.

The New-England Journal

OF

MEDICINE AND SURGERY.

Vol. IX.

APRIL, 1820.

No. II.

The botanical character, chemical properties, and medicinal virtues of the Chelone Glabra, or Snake-head. By JONATHAN A. ALLEN, M.D. of Brattleborough, Vt.

WITH A PLATE

[Communicated for the New-England Journal of Medicine and Surgery.]

THE *chelone glabra* is a perennial indigenous plant, which is found on the banks of brooks, and on wet grounds, probably from Georgia to Nova Scotia. It forms bunches, and rises to the height of two or three feet. Its usual period of florification is in July and August.

This genus has a calyx five cleft or leaved; corolla ringent inflated; the upper lip emarginate, obtuse; under lip slightly three cleft, with the rudiment of a fifth glabrous filament; capsule two celled.

Its arrangement in the sexual system of Linnæus is in the class didynamia, and order angiospermia; and in Linnæus' natural order, personatæ. Its Jussieuan order is scrophulariæ.

This species, of which there is supposed to be only the *glabra* in this country, is characterized by leaves opposite; lanceolate, acuminate, serrate, spikes terminal.

The stem is smooth, bluntly four cornered, and not unfrequently branching. The leaves commence near the ground, and are handsomely disposed at a distance of from two to three inches apart to the top. A few only of the flowers expand at a time, and are usually of a white colour, in many instances; however they have a red shade. The corolla is large, inflated and contracted at the mouth, which gives it the resemblance to the head of a serpent. The lower tip has three small seg-

ments, with two woolly stripes within. The stamens are hairy. The calyx nearly sessile, with five short rounded segments. The seeds are numerous.

The sensible property of the leaves of the *Chelone* is an intense bitter. The flowers and stem are nearly tasteless.

On adding a solution of acetate of lead to an alcoholic tincture, a copious white precipitate was produced. Sulphate of iron caused a black precipitate; muriate of iron a precipitate, which, on standing, assumed a brownish hue. A tincture of the leaves in water produced a muddy appearance. From these experiments it will readily be inferred that the *Chelone* possesses, 1. A bitter principle; 2. Tannin; 3. Extractive matter; 4. Resin.

The medicinal properties of the *Chelone* are those of a tonic and astringent. These properties it possesses in an eminent degree.

For several years past, Dr. Lemuel Dickerman, President of the second Medical Society of Vermont, has been in the habit of prescribing a decoction of the *chelone* in the last stages of dysentery and diarrhœa with uniform success.

Dr. John Hazeltine of Townsend, Vermont, for several years has found it successful in most cases of relaxation of the alimentary canal. He has also found it to give relief in an obstinate case of habitual colic, after the failure of many other medicines. The patient had suffered from a severe attack of the colic, every few weeks, for a number of years, but from the commencement of the use of the *chelone*, she had not had a return for more than a year.

Dr. William Atherton has found it successful in several cases of obstructed catamenia. He is of opinion, however, that its efficacy depended on its tonic power and not on its having any specific influence on the uterine system.

In my hands the *chelone* has proved as successful as any vegetable tonic. It has failed, and so have others. In one instance it relieved an old dyspeptic after *eupatorium perfoliatum*, bark and wine had been used without obtaining a cure. It is certainly less nauseous than the *eupatorium*, and as a tonic and astringent in general is preferable.

It may be given either in decoction, tincture, or powder. Two drachms of the powdered leaves to a pint of spirit form a sufficiently strong tincture. The decoction requires the same proportions. Of either the spirituous or aqueous solution, from two drachms to an ounce may be taken three or four times a day.

The plant should be gathered when in flower, carefully dried, the leaves are then to be stript from the stem and laid away for use.

Clinical Remarks. By ABEL L. PEIRSON, M.D.

[Communicated for the New-England Journal of Medicine and Surgery.]

MESSRS. EDITORS,

MUCH practical information, particularly useful to the younger part of our profession, is lost undoubtedly from the unwillingness of men of business to communicate the result of their experience through the medium of public journals. And this unwillingness arises in part from the mistaken idea, that these results can be useful to the world only when published scientifically and methodically. Allow them a style a little more colloquial than that of our best practical writers, and we should oftener have, from the more experienced members of our profession, a description of, and remedy for those daily difficulties and vexations which embarrass the practice of almost every man, when he first essays our profession; and which, if he has a feeling heart, must make some of his first attempts in the healing art, subjects of unpleasant retrospection.

I will acknowledge that, in composition, methodical detail predominates much in rank and dignity over the opposite. But while few are able to write methodically, the honest reflections of any man of skill are important to the inexperienced practitioner. For my own part, I shall always esteem your journal rich, when I find within its covers, the miscellaneous, practical remarks of men of experience, illustrated by common *every day cases* and dissections, explaining the most obvious causes of error in practice, and the most certain way of avoiding them. If you agree with me in these preliminaries, you are welcome to make use of any thing which I can contribute to your valuable paper.

Inflammation of the mucous membrane of the intestines.

It seems to me impossible that any man should commit a gross error in the treatment of local diseases, who is able to compass two points:

First. To make an accurate investigation of the *diseased appearances*, or the symptoms, and

Secondly. To infer correctly from these, the *actual state* of the organ affected. If he do this, he need not subject himself to the danger of being led away by *the influence of names*; and the name of a disease unfortunately has often a greater influence in the selection of remedies, than the peculiarities which the patient exhibits.

The name *dysentery* is broad as the mantle of charity, and much more liberally bestowed; and has blinded the eyes of many a young practitioner in cases of inflamed mucous membrane. And when once he has pronounced this comprehensive term as the name of a disease of uncertain or anomalous character, he finds himself, as it were, *compelled* to employ remedies of a certain class, as the legal practitioner is bound to observe "the statute *in that case* made and provided." If he has not committed himself in this way, he may be suffered to treat inflammation of mucous membrane of the bowels upon general principles of therapeutics. As a general rule, the nearer the inflammation is seated to the lower extremity of the canal, the greater will be the straining and tenesmus; and the nearer it be to the stomach, the greater the sympathy of that organ. The situation of the pain also, with regard to the sacrum, the loins, and the umbilicus, will serve to point out the diseased parts of the canal.

Cases.

July 3d. I was called to visit a robust woman of about 45 years of age. She had been attacked two days before with slight diarrhœa; this had left her. On the 2d of July, while from home, she was attacked with pain in the bowels; to relieve it she swallowed a large draught of spirits. By this she obtained relief till she reached home, when the pain returned more violent than before, which increased till the next morning, when I was called. I found her hot and thirsty; pulse 90, rather feeble; complaining of great pain in the lower part of the loins, extending up the back. She bore moderate pressure on the abdomen, but when increased, suffered great pain, she had constant desire to stool, and thin, watery discharges. She was ordered to take a few drops of tincture of opium, after each discharge a cathartic of submuriate of mercury, and in aid of this last, a small quantity of neutral salts in solution to be repeated every hour.

July 4th. I found the discharges had acquired the dysenteric character of blood and mucus; symptoms not diminished by the operation of the cathartic which brought away much

matter of a membranous consistence, but no fæcal matter. The submuriate to be repeated in larger quantity; neutral salts to be continued. Cathartic operated this day copiously, and with good effect; some fæces appeared.

July 5th. The soreness somewhat abated; a moderate purge was again exhibited, which brought away much fæcal matter, and on the 6th the patient was convalescent. In this case it appeared safe to keep up, by purging, an increased discharge from the excretories of the mucous membrane, which speedily removed the disease. Indeed but little debility followed, for before the 10th, notwithstanding the effects of a large blister upon the abdomen, the patient was in the street again at her usual out-door employment.

July 22d. I visited a feeble, slender woman, of about 40 years: she had suffered diarrhœa which was stopped. Complained of great pain with periodical exacerbations, in the umbilical region darting to the back. The whole abdomen was very tender; there was constant desire to stool, without evacuations; great nausea and rejection of every thing received into the stomach. Pulse *moderately* full, strong, and hard. I had a strong inclination to take blood, but the patient always being slow to recover from illness, I considered the evacuation contra-indicated by the state of her strength. An emetic was ordered, and followed by mercurial cathartic and neutral salts, and after one full evacuation of the bowels was obtained, they were quieted by a moderate dose of opium. The effervescing draught relieved the nausea, and anodyne, emollient enemata, the tenesmus. The patient began to mend after the first evacuations, and a mild purge was all that was afterwards necessary, and on the 26th every symptom of disease had disappeared. But so great weakness was induced, that four weeks afterward the patient was unable to attend to her household affairs. Now there could be no doubt that these two cases were instances of the same disease occurring in different parts of the canal, but in subjects so different, that the vigorous course pursued with the first, would have well nigh proved fatal to the second. And yet the disease in the first had attained a more advanced stage than in the second: the debility in this last case was no doubt much owing to sympathy with the stomach, which was long in recovering its tone.

Intus Susceptio.

Aug. 12th. Mrs. G. while at stool, had suddenly forcing pain, and what she considered prolapsus. She could not re-

duce it herself and immediately called in the assistance of a neighbouring empiric, who made unsuccessful attempts at reduction and increased the suffering. I first saw the patient ten hours after the protrusion—found her in great pain in the umbilical region with forcing pains, faintness and nausea. A tumour protruded at the anus of the size of a hen's egg with an attachment like that of a polypus, which extended as far up the rectum as the finger could reach. The surface of the tumour was evidently membranous and of a deep chocolate colour. After many attempts I succeeded in reducing it, and it immediately went up beyond the reach of the finger. The pain was now a little abated, an opiate was ordered and a saturnine lotion.

On 13th. Patient appeared to have many dangerous symptoms; such as feeble, wiry pulse of 90; nausea and faintness; loss of appetite; straining and forcing pain; tongue coated, cracked and dry—these were somewhat relieved by opiate enemata and a few grains of camphor taken occasionally, with decoction of cascarilla and cinchona in small quantity.

On 14th. She has somewhat revived from the state of depression which existed yesterday, but did not begin to take purgatives till the 15th, when the pain, tumour and hardness appeared to be confined to the left iliac region, which was very tender to the touch. Neutral salts and purgative enemata were perseveringly exhibited till discharges were effected, which did not happen till the 17th. Fomentations and embrocations were applied, and the patient slowly recovered upon the use of the cinchona.

I have no doubt the person who was first called to this case considered it prolapsus ani, and finding it not easily reduced, left it without fear of the consequences. But the elastic bladder-like feeling, the absence of firm muscular fibres, and the small, twisted membranous attachment, extending as far up as the finger could reach, proved it was no part of the rectum; and the subsequent soreness and tumour, the natural consequences of the violence done to the protruded gut, pointed out the intus-susception to have taken place somewhere about the junction of the colon and rectum.

Delirium Tremens.

On the 1st of June, I visited a stout labourer, a native of the Isle of Jersey, who had frequent fits of gout while in his own country, but since he came here, having become a rum drinker, he had gout but once in 3 or 4 years. I found him

suffering from the imprudence of having repelled the gouty inflammation from the great toe of the right foot, upon which there had followed a severe affection of the stomach. Appropriate remedies gave him relief, and the gout seemed to be established in regular train, when on the evening of the 3d, I found him attacked by symptoms of delirium tremens. I took twenty ounces of blood, and ordered three grains of opium, and as many of camphor, every three hours. He had no sleep, and his raving continued till the 4th, when his situation became highly alarming. I consulted, on this day, an older practitioner, who advised to the use of digitalis. I gave him seventy five drops of the tincture of digitalis, once in two hours, carefully noting the effect of each dose. After five doses, the only effect of the medicines was an *increased fullness* of the pulse. This night was passed as the preceding. Not choosing to trust the digitalis with the attendants, I gave him the last dose at eleven at night, and resumed the medicine again at seven in the morning. At this time the patient showed some appearance of languor, but the disorder was unabated and I found I had lost that control of him which till now I had been able to retain. He took the digitalis however, through the day at intervals of three hours, and at night his pulse had lost ten strokes in the minute, in frequency, and gained a little in fullness. The medicine was now omitted, and on the 6th June, the disorder was nearly gone. From this time he rapidly recovered. The gout did not return. This patient for six months previous to the attack, had been in the practice of drinking a pint of New-England rum daily and without intoxication. He was fifty years old—and had a depression of the top of the cranium produced by a bullet wound, many years since. Not long after this case occurred, I was called to another, of nearly equal violence, in which, after bleeding, I used nothing but digitalis, and with the most perfect success. Digitalis is very generally used by the practitioners of this place in the treatment of delirium tremens, which has obtained among the common people the appropriate name of *rum-fever*. I think it important to remark, that upon the exhibition of digitalis, I have always found *increased fullness* of the pulse to precede a diminution of its frequency.

Salem, Dec. 1, 1819.

Case of Congenital Fungus Hæmatodes. By J. H. FLINT, M.D.

[Communicated for the New-England Journal of Medicine and Surgery.]

DECEMBER, 27th, 1819.—I was called to G.'s child, three weeks old. On dressing the child the day previous, the mother discovered, for the first time, a tumour on the posterior part of the head, the size of a pullets egg, circumscribed and evidently containing a fluid. There was no discoloration of the skin, or appearance of inflammation either in the tumour or contiguous parts, but when compressed produced symptoms of extreme pain. There were no circumstances connected with the history of this case to account for the sudden appearance of the tumour. I attended the mother in parturition. The labour was natural, and the child was of ordinary size, and appeared healthy. Within a few days, however, notwithstanding the nurse had taken the precaution to have the meconium well purged off, the bowels became painfully disordered, and the mouth was covered with aphthæ. By the use of mild medicines the thrush disappeared, and the bowels were better; still, at times, the child seemed to suffer great pain and was obviously declining. At this juncture the tumour was discovered, and that it was suddenly formed, there can be no doubt, else it could not have escaped the observation of the nurse. Taking into consideration the above circumstances, the absence of inflammation, and the certainty that the tumour contained a fluid, I suspected it to be an aneurism of the anastomosing branches of the occipital artery, and accordingly directed steady and continued pressure, and if inflammation succeeded, to substitute fomentations and an emollient poultice.

30th. I saw the child again. The tumour had increased in size, and on examining closely its point, I observed the skin to have become very thin, and a small red spot denoted that the contents would soon find their way through. This event I anticipated by making a puncture with the point of a lancet. As I had apprehended, blood flowed from the puncture and the tumour was considerably diminished in size. In a few minutes it ceased to bleed; when I brought the lips of the wound together, and directed again to compression on the body of the tumour. It continued, however, to bleed, at intervals through the day and at night—the child was so much exhausted by the hæmorrhage that I was summoned to suppress it. After removing the dressings, I secured the puncture, as I thought, by su-

ture and made strong compression on the tumour and trunk of the occipital artery. These means were ineffectual, the hæmorrhage continued, and the second day after, the child died.

Dissection.

On laying off the scalp, the tumour presented itself, a dense coagulum of blood, covering the occipital bone and thinly spread beneath the membranous expansion of the occipito-frontalis muscle—on raising the membrane and tumour, I found the pericranium denuded to the size of a cent, in the middle of the occipital bone, and the bone itself rough and spongy. Examining it more attentively, I discovered several small apertures longitudinal in the diseased bone, directly at the point where the sinus separates to form the lateral sinuses, and immediately under the base of the tumour, through which blood was made to flow freely by compressing the head. From these appearances it may be inferred,

That there existed disease of the bone before the formation of the tumour, and

That the tumour was supplied with blood through the apertures in the occipital bone, from the sinuses of the brain. I confess myself wholly at a loss to account for this disease, and as I do not believe it to have been the consequence of local injury sustained at birth, or afterwards, I have considered it a case of what Boyer terms Congenital fungus hæmatodes.

NOTE.—I regret exceedingly that I was not prepared to remove the diseased bone, as it would have enabled me to have carried my examination within the skull, and would have led, probably, to the discovery of the origin of the disease.

Northampton, 1820.

REVIEW.

ARTICLE IV.

The Philosophy of Domestic Economy, as exemplified in the mode of warming, ventilating, washing, drying and cooking, and in various arrangements contributing to the comfort and convenience of Domestic Life, adopted in the Derbyshire General Infirmary, &c. &c. With engravings. By CHARLES SYLVESTER, Engineer. London, 1819.

THIS book contains a satisfactory account of the manner in which the various domestic processes, enumerated on its title page, are performed on philosophical principles at the Derbyshire Infirmary. The application of physical science to the economy and comfort of living, has been successfully pursued by various philosophers of our day. We have acquired the means of living more at ease and with less expense than our fathers, because we can direct those operations of matter, which are subservient to our necessities, in such ways as materially to increase their effects.

In the charitable institution which has given rise to the volume before us, it appears that much ingenuity has been put in operation to supply from the resources of art, the various wants of the building and its inhabitants. As the apparatus at the Derbyshire Infirmary is in many respects original in its contrivance, or peculiar in its modification, an exposition of its features, and a consideration how far the ends of it are accomplished, may be of some use as it respects its employment in the buildings, public and private, of our own country.

This Infirmary or hospital is a building of three stories, having its wards for patients, its store rooms, cellars, kitchens and the usual appendages of similar institutions, very advantageously constructed and arranged. On its general structure, or the features which it may have in common with other hospitals, it is not our intention to dwell. Its peculiarities are found in its arrangements for the purposes of ventilation, of heat, of cleanliness, and of the various processes of the laundry and kitchen. These we shall successively consider.

The first important economical appendage to this building is its *Steam engine*. This engine is of one horse power, yet its boiler is suitable for a six horse engine in order to furnish steam to the kitchen, the public baths, the wash house, &c. The steam engine works a forcing pump which raises the water from a well to a cistern at top of the building, from which the house is supplied with cold water. It also gives motion to a horizontal shaft communicating with the wash-house, and there turns the washing machine.

The *baths* which are warmed by steam from the engine are kept open to the public, and produce a considerable revenue to the charity. One of them is kept at the temperature of 92° , the other at 84° . These baths are very large, the superficial area of the bottom of each bath being 162 square feet. This at five feet in depth will hold 810 cubic feet, or 4860 gallons of water. A small stream of water is constantly running into them in the day time. The boiler of the steam engine supplies them with steam through one pipe for each, one inch in diameter. This pipe terminates in a larger pipe carried quite round the bottom of the bath, and concealed in a recess in the wall, covered by a thin stone plinth; the bottom of this plinth is perforated with small semicircular arches, the top being placed about half an inch from the wall to allow the water of the bath to circulate freely in contact with the outside of the large pipe. These pipes are about four inches in diameter, and are formed of cast iron, that they may be strong enough to resist the pressure of the atmosphere when the steam is condensed. It is stated that if one of these baths were filled to the depth of five feet with water at the freezing point, it would require, to raise this water to 96° , about 304 gallons of water in the form of steam, for which purpose fifty pounds of Newcastle coal must be consumed. This mass of water, if the door be kept closed, would cool only four degrees in twenty four hours, and would require to keep up the temperature a daily supply of coal little exceeding three pounds! We are told that these facts are derived from experiments by observing the times of cooling, and that the calculation for the fuel is taken from the economy of Bolton and Watt's steam engine. We are not told, however, whether this saving in theory is wholly realized in practice, nor in what seasons and temperatures of the atmosphere it takes place. We must confess that if a mass of water more than twelve feet square and five in height, can, under the ordinary conducting influences, be kept at a perpetual temperature of 96° by the combustion of three pounds of coal per day, that the art of economizing fuel has arrived in Derbyshire very near to its ultimatum.

Within the bathing rooms, no wood-work is made use of, as it would be liable to decay from the continued condensation of the steam. The door is made of slate; the frames of the doors and windows coated with copper; the ceilings made of Roman cement; and the room ingeniously covered with a dome of earthen pots.

The *stove* in this Infirmary is intended for warming the whole building. It is placed in the basement story, and like similar stoves in the cellars of various large buildings in this country, it communicates warmth to the upper apartments by flues of hot air passing into them. Of a variety of plans which have been contrived to effect this object, the one at Derbyshire is the most complicated and expensive which we have seen, at the same time that it does not appear to us to be the most effectual. A short description will give some idea of its general construction. The stove has a hopper-shaped fire-place, supplied underneath with air brought from without the building, and with fuel from an opening in the side. Above this hopper is a large vessel of thin wrought iron, called *the cockle*, resembling somewhat an inverted receiver or bell with its mouth immediately over the fire, and intended for the accumulation of the smoke. The only escape for the smoke is at a crevice on each side the base or mouth of this cockle, which is not more than half an inch wide, and which is kept free from soot by a sliding rake. The air, which is to warm the building, is heated principally against the sides of this cockle. The cockle is surrounded by two brick walls, the inner corresponding to its own shape, the outer extending into a flue for the hot air. A horizontal partition connects these two walls at about half the height of the cockle, the lower space which is to be occupied by cold air, being thus separated from the upper space which is destined for the heated air. The whole of the inner wall is perforated with numerous holes, in which are placed short tubes of earthen ware or sheet iron, the mouths of which are within three-fourths of an inch of the cockle. By means of these tubes, the cold air, which is below the horizontal partition, is brought into close contact with the cockle; being heated it ascends, and after various eddies, passes out through the tubes which are above the horizontal partition, and is carried by the brick flue into the upper parts of the building.

We are much disposed to question the necessity of these tubes, and even of the brick wall which contains them. It is obvious that the air which they convey must be heated unequally. A portion which may enter by the row of tubes next below the horizontal partition, and escape by the tubes next

above it, can remain but a moment in contact with the cockle, and be but very little heated by it. On the other hand, the portion which enters at the lowest tubes and escapes by the uppermost, will be in contact with the cockle for its whole length, and receive from it the greatest possible heat. Why not then dispense with the intermediate tubes, and admit all the air at the bottom and discharge it all at the top? We may go farther and dismiss the whole of the tubes, not less than 500 in number, and also the whole of the brick wall which contains them; and by simply bringing the external wall within three quarters of an inch of the cockle, we shall heat the air more effectually at the same time that we get rid of more than half the apparatus.

We are told, that the plan of warming large edifices by means of air flues communicating with a stove at the bottom of the building, is originally the invention of W. Strutt, Esq. of Derby; and that it was in use by him at his cotton mills as early as 1792. If this be the case, that gentleman deserves very great credit for the invention of a principle, which, in its different forms, has since proved of great practical utility in the heating and ventilation of buildings.

Another peculiarity of the Derbyshire Infirmary, is the introduction of air to the building through a subterranean passage, which is intended to warm it in winter and cool it in summer. This passage or air flue is about four feet square, and seventy yards long. At its outer extremity a current of air is directed into it by means of a turncap, which is moved by a vane, and always presents its mouth to the wind. Another turncap with its mouth from the wind, is placed on the top of the building, to promote its ventilation in summer. The power which this subterranean passage is said to possess in changing the temperature of the air which passes through it, is very great. "In the month of August, when the thermometer in the shade stood at 80° , the air which entered the air flue under ground, at the same temperature was found to be 60° at the other extremity where it entered the stove room." In another experiment, when the outer air was at 54° , it was reduced to 51° by passing through the air flue. If such be the reduction of temperature produced on the air in summer by passing under ground, it must constitute a superior mode of ventilation, and of counteracting the excessive heat of some of the summer months. We presume that the passage is made water-tight, so that no dampness or earthy smell is communicated to the air, nor the passage itself obstructed by water in the wet seasons. We presume also that in winter time the great length and

depth of this passage secure it from an accident to which cellars and vaults in our climate are always liable, that of freezing whenever they have the slightest communication with the open air.

The *wash house* and *laundry* are very usefully contrived. The washing machine is a cylinder revolving in a box or cistern. The cylinder is divided into quarters by diametrical partitions, each quarter having a door opening into its cavity for the introduction of the clothes, and numerous perforations to admit water. The clothes with soap are placed in the cylinder, and a quantity of water introduced into the cistern. The water is heated by pipes of steam from the boiler of the steam engine, and the cylinder is turned by the engine until the clothes are washed.

The laundry is a large room heated by a stove and cockle, nearly similar to that which has already been described. The clothes to be dried are hung upon railed horses, which slide upon ridges, and when shut together, form a tight apartment. The hot air from the stove circulates among these clothes and escapes at an opening on the further side of the floor. The evaporation is thus carried on with great rapidity and the clothes dried in a very short time. For heating the irons, the top of the cockle is made flat, that they may be placed upon it.

The *kitchen* of this institution is fitted up with stew hearths, a small fire place on the Rumford plan, a large and a small roaster, an oven for bread, and a steaming apparatus of a peculiar construction. The plan of the roaster is that of an oven, having an external cavity through which the smoke may circulate quite round it. The fire which is built beneath, does not strike immediately upon the bottom of the oven, but first passes quite round it, so that the bottom is the last part with which the smoke comes in contact, and instead of being the hottest it is the coolest part. For the purpose of browning the meat, hot air is admitted into the oven from a tube which is heated below the bottom.

The steaming apparatus occupies a recess in the wall similar to that used for the common stew hearth. In this recess there is a horizontal square plate of cast iron, surrounded by a groove, and having a hole in the middle connected with a steam pipe, which has a graduated stop cock. This plate, which is called a steam table, is between two and three feet square. It is covered by an inverted vessel like a dish cover, the edge of which fits into the groove, and when the groove contains water, is of course air tight. The articles to be steamed are introduced under this vessel, the steam is admitted by the pipe, and the steaming process can be carried on to any necessary length.

The structure of the *water closets* is ingenious, but would have been more effectual had it been more simple. "The superiority of this water closet over all others," says the author, "consists in its preventing any smell, without the least care of the person using it. The person who enters it, fills it with fresh air, which is left behind on coming out." The construction which produces this effect is as follows. The closet has a compound shape, a part of it being circular, and the rest square. The circular part contains the door, and the square part the seat. At the centre of the circular part, is an erect arbour or axis, upon which the door is hung, so as to occupy the situation of a radius to the circle. When the door swings round, it sweeps over every part of the circular room, driving all the air before it. When a person enters, he passes round the axis, pushing the door before him, until it has described nearly a whole circuit, before he can enter the square apartment. The air which was previously in the room being driven before the door, escapes at an opening in the ceiling over the seat. On returning, the person takes hold of a bar or lever fixed to the axis, and by pushing it before him as he goes out, obliges the door to follow round the circular space, till it arrives at its original position. A pannel of the door is constructed like a valve, and permits the external air to enter as the door is carried outward.

Now, to us it appears, that this plan of ventilation is incomplete. The square part of the closet not being swept by the door, can only exchange its air for that which was previously in the circular part, and the person occupying the closet does not breathe one particle of air which was not in it before he entered. In order that the ventilation should be perfect, the square part of the closet should have been omitted, and only a circular or even semicircular apartment retained, having the seat within it. The seat should be curved like the room, and the door should be a diameter, hinged at the centre, instead of a radius, and having a notch at bottom to pass clear of the seat. A person entering would then, by carrying the door only half round its circle, completely shift the air of the whole room he occupied. The door would also be shut after him, whereas, in the other case, it is open.

A watch clock invented by Mr. Strutt, and used during the erection of the building, is a simple and very ingenious piece of mechanism. In this clock, the dial-plate revolves, the hour being pointed out by a fixed index. The circumference of the dial is studded with small sliding pins, all pointing towards the centre, and at the distance of a quarter of an hour from each other. These pins, as the dial re-

volves, pass over a snail or cam which occupies the centre, and by which they are successively pushed out, so as to project beyond the circumference, in which state they remain. They can be replaced or put back, one at a time only, by touching a lever which acts directly at the summit of the dial, and which, if regularly attended, puts down each pin as it arrives at the top. If the pin is not put down at this moment, it passes on, and the opportunity of replacing it is lost. The watchman, therefore, is obliged to visit the clock every quarter of an hour during the night. If he neglects so to do, the pin belonging to that quarter of an hour in which he is absent, remains projecting from the circumference, and indicates his negligence in the morning. An improvement has been made in the management of this clock, by connecting it with wires from the different apartments of the building, which must be visited and pulled in regular succession, to keep the clock right, thus compelling the watchman to go a regular round with short intervals.

We have taken a superficial view of the principal parts of the apparatus in this Infirmary, and have omitted to give an account of the other less distinguished portions. It may suffice to state, that every thing is here carried on upon philosophical principles, reflecting great credit on the engineers and directors of the building; that most of the contrivances discover great ingenuity, judgment and skill, and that though, perhaps not always the best possible specimens of their kind, yet they present means of economy and convenience, much surpassing those of which they are destined to take the place. We find that the attention of the architects and engineers has not been engrossed merely by the leading features and objects of the building, but has descended into its minutest wants and conveniences. We cannot neglect to notice, before closing this account, an application of the powers of steam which we believe to be perfectly original. Dr. Darwin predicted long ago that this powerful agent would be made to propel boats, and waggons, and even flying machines. But we think he could not have foreseen an object it was to effect in the Derbyshire Infirmary, viz. that of making *milk porridge*. For the accomplishment of this purpose, the boiler of the steam engine has a pipe communicating with a large vessel intended to contain the milk. Into this vessel the milk and meal are put. The steam being admitted from the pipe performs a double office; first, to heat the milk to a proper temperature, and secondly, by condensing into water, to dilute it to the degree requisite to constitute it porridge.

ARTICLE V.

Exposition of the Atomic Theory of Chymistry; and the doctrine of Definite Proportions. By WILLIAM JAMES MACNEVEN, M.D. Professor of Chymistry and Materia Medica in the College of Physicians and Surgeons of the University of the State of New-York. With an appendix of Chymical Exercises, by the Pupils of the Laboratory. New York, 1819. pp. 99.

THE fact, that when bodies unite chemically with each other, they always enter into combination in certain determinate proportions, is now universally admitted. It has likewise been proved, that if two substances which are known to have mutual affinities, be mingled in quantities differing from those of which the compound consists, there will remain an uncombined excess of one or the other, according to the proportions before mixture. Affinity therefore differs from attraction or gravitation, which gives rise to the phænomena of mechanical philosophy. Further, it is found, that the bases may be combined with different quantities of another element or compound, and that whenever this takes place, there exists a certain ratio between the higher and the lower quantities. To express this general fact in the simplest form, it may be stated, that when one body combines with another body in more than one proportion, the second or third proportion is a simple multiple of the first proportion or quantity. Thus potash combines in two proportions with carbonic acid, and mercury with two proportions of oxygen; in the bi-carbonate of potash, the carbonic acid is double the weight of that which exists in the carbonate, and the oxygen in the protoxide of mercury is just half the weight of that which is found in the peroxide. This law extends to gaseous bodies, and they combine volume to volume, or one volume of one, with one, two, three, &c. volumes of another. Hence it appears, that bodies unite in certain proportions only; that these are definite, and bear simple ratios to each other. These general facts constitute that branch of chemical science, which is called *Definite Proportions*.

But chemists have not been satisfied with these useful facts. From the moment almost that they were discovered, they began to theorize upon the subject, and to find out some cause for the uniformity observed in the proportions of the remote or proximate elements of chemical compounds. Mr. Higgens was the first who led the way, and some years afterwards his ideas were amplified, and the theory was proposed in a more precise and

extended form by Mr. Dalton. The deductions of this philosopher constitute the *atomic theory* of chemistry. Dr. Macneven, in adverting to the cause of definite proportions, remarks :

“In ascending to the cause, we can assign it no other residence, than those elementary particles of matter, which are so constituted as to be exempt from decay or change, though they are capable of being variously compounded together and separated again, so as to give origin to the perpetual transitions of elementary into organized matter; but the nature of the elements themselves is immutable; the forms only can vary. The indefatigable alchymist frequently exhausted every device and process, endeavouring, with keen research and prodigal talent, to alter the nature of matter, and transmute one species of metal into another, but he was eternally foiled in this chimerical attempt.

“The productions of nature have not only succeeded one another in the same general order, but have been from the beginning invariably the same. An oak of the present time has the same general nature and the same properties, as those of all other oaks that ever existed; we find the same texture in its wood and bark; a similar disposition, in general, in its root and branches; the leaves have the same form; the juices the same astringent power; the fruit is moulded to the same shape of an acorn, and has the same invariable property of never producing any other tree than an oak.

“All this shews that the elements of bodies are permanent and unchangeable. Had they been liable to any gradual alteration or waste, the oaks of the present times, composed of those changed materials, would not be found to have the same qualities as the oaks of remote ages; and the order and course of nature, as well as the qualities of her productions, would have been different from what they have uniformly appeared, and what we actually find them.

“Such obvious reflections on the course of nature have, in the earliest ages of philosophy, suggested the supposition of a certain number of unchangeable elements, of which it was imagined all things were composed, and on the successive separations and reunions of which depended the decay and reproduction of all natural objects. This was the meaning of the opinion ascribed to Democritus, that all things were formed of atoms.*

“We are consequently warranted by the phenomena, in assuming that the ultimate particles of matter are so perfectly hard and minute as never to wear or divide. It is only by continuing entire, that the particles may form bodies of the same nature and texture in all ages. Should they wear away, or break in pieces, the nature of all things depending on them would change incessantly, and, contrary to experience and fact, there would be no permanent species of matter. But since the ultimate particles, which henceforth we shall call atoms, are indivisible and indestructible; we may be permitted to deem them also simple.” pp. 2—4.

* Black's Lectures, vol. 2. p. 4.

It is obvious however to every one, that all this is purely hypothetical, for we are altogether ignorant of the form and constitution of matter, and we are unable to demonstrate the existence of atoms; much less is it in our power to affirm that a compound is composed of one atom of one body united with one, two, or three atoms of another. On the other hand, experience is in favour of this doctrine; it accords well enough with our notions of matter, and it would be difficult to assign any more satisfactory cause for the permanency of different bodies, or the fact of their uniting only in multiple proportions. Dr. Macneven remarks that these facts cannot be owing to any thing else, than the union of a certain determinate number of the atoms of one body with a certain determinate number of the atoms of another. The proofs of this position, he thinks, will be more easy and striking, if an example be first taken from the union of gaseous bodies, the atoms of which, unrestrained by the force of cohesion, are at liberty to arrange themselves according to their chemical affinities.

“Let the compound to be investigated be water, which is known to result from the condensation of oxygen and hydrogen gases, when they are ignited together. We shall denote the atoms of oxygen which unite by x , and those of hydrogen by y , and then an integrant particle of water will, in every case, be $x + y$.

“The numbers x and y are easily found by making an accurate analysis of the different compounds into which various proportions of oxygen and hydrogen enter. Let us take water. It is known from experiment that 100 cubic inches of oxygen gas, weigh 33·888 grs., and that 100 cubic inches of hydrogen, weigh 2·117 grs. If these volumes be mixed together, and the electric spark passed through them, there will be a condensation of all the hydrogen and half the oxygen; so that 100 cubic inches, or 2·117 grs. of hydrogen, can condense no more than 50 cubic inches, or 16·944 grs. of oxygen. But, if we mix 2 volumes of hydrogen, or 4·234 grs. with 1 of oxygen, and then pass the electric spark, there will be a complete condensation of both the gases, and a portion of water left, precisely equal to their joint weights; consequently, the weight of oxygen in water is to the weight of hydrogen in water, as 16·944 is to 2·117, or as 33·888 to 4·234, all which, reduced to their lowest terms, are as 8 to 1. Now, if water be a combination of one atom of oxygen to one atom of hydrogen, it follows that the atom of oxygen weighs eight times as much as the atom of hydrogen.

“We may give to this reasoning a more general form, by putting y for any volume of hydrogen, and x for the same volume of oxygen; then there are in water, by experiment, $2y + 1x$; and since 1 x weighs 16 y , the constituents of water may be expressed in weights of y ; thus, $2y + 16y = 18y$, the whole weight of water. Supposing this 100, we have $18y = 100$ and $y = 100 \div 18 = 5·555$,

weight of 1 *y*, or one volume of hydrogen; but there are 2 *y*, or two volumes, consequently $5.555 \times 2 = 11.110$ gives the weight of hydrogen in 100 of water.

"If we subtract the weight thus found from the compound, we have, $100 - 11.110 = 88.890$, the weight of oxygen in 100 of water.

"Now $88.890 : 11.110 :: 8 : 1$ nearly.

"The weight of an atom of oxygen or hydrogen may also be deduced from the specific gravity of those gases, and it is the more usual way, for the weights of equal volumes are to each other as the specific gravities. Thus, the sp. gr. of hydrogen being 0.0694, and that of oxygen 1.111. If we take *y* to represent the weight of any number of atoms of hydrogen in a volume, we shall have this proportion $0.0694 : 1.111 :: y : 1.111 \times y \div 0.0694 = 16 y$; and if 16 *y* equal the weight of the atoms in a volume of oxygen, $y \times 2 = 2 y$ is the expression for the weight of an equal number of the atoms of hydrogen; but $2 y : 16 y :: 1 : 8$. Therefore, the atom of hydrogen is but $\frac{1}{8}$ of the weight of an atom of oxygen.

"Another mode of obtaining the relative weights of the atoms from the sp. gr. of their gases is to compare the sp. gr. of each gas with the sp. gr. and weight of the common standard atmospheric air; and as they are to one common third weight they will be to one another, thus:—

"1.000 : 1.111 :: 30.5 : 33.888 weight of oxygen.

"1.000 : 0.0694 :: 30.5 : 2.117 weight of hydrogen.

"The numbers 1.000 represent the sp. gr. of atmospheric air; 1.111 that of oxygen gas; 30.5 the weight in grs. of 100 cubic inches atmospheric air; and 33.888 the weight of the same measure of oxygen gas." pp. 10—13.

We have made this copious extract in order to enable our readers, who are not very conversant with this subject, to become acquainted with the method by which the relative weights of the atoms of the different elements may be found; for the numbers for oxygen and hydrogen being obtained, the numbers for all the other elements with which either of these is capable of combining may be deduced without difficulty; at least in all those cases in which the proportions have been established by chemical analysis. Dr. Macneven has here founded his calculations upon the specific gravity of hydrogen, as deduced by Dr. Prout, and adopted by Dr. Thomson. The ratio is as one of hydrogen to eight of oxygen; and it is most probably nearer the truth than that of 1 to 7.5, since the former ratio, which was first derived from the composition and specific gravity of ammoniacal gas, has been more lately verified by the direct experiment of some of the European chemists, viz. the taking of the specific gravity of pure hydrogen; and it possesses the advantage of making the number for oxygen an integer.

But in order to form tables of the numbers attached to the atoms of different elements, it is necessary that one of them

should be taken as a standard to which the others may be referred. This of course has been done, and the choice laid between oxygen and hydrogen. Dr. Macneven, in conformity with Drs. Thomson and Wollaston, and Professor Berzelius, has adopted oxygen, and he was led to this determination by the arguments of the latter. On the other hand, Mr. Dalton, Sir H. Davy, and Mr. Brande have taken hydrogen as the unit, and M. Gay-Lussac has in many instances likewise followed their foot-steps. The arguments, in a philosophical point of view, preponderate, in our opinion, on the side of hydrogen, but in its practical application, oxygen will be found most convenient. It seems not a little singular, that chemists should never have come to an agreement upon this subject; and still more singular, that those who are agreed respecting the element to be used as a standard, are yet at variance among themselves with regard to its value. Thus, in relation to hydrogen, the ratio of the elements in water is stated by Mr. Dalton to be as 1 : 7; by Sir H. Davy as 1 : 15, and by Mr. Brande as 1 : 7.5. With regard to oxygen, Dr. Thomson considers it as 1, Dr. Wollaston as 10, and Berzelius as 100. The consequence of all this is a great diversity of numbers applied to the same element or compound; the student in reading different authors must be confused, and finally be obliged to reject them altogether, unless he choose to abide by the scale of Dr. Wollaston, which, as it furnishes the means of practically applying his numbers in the laboratory, may perhaps come into general use.

We shall now proceed to an important objection, which may be urged against the atomic theory when brought into practice. At page 13 Dr. Macneven remarks: "The fact, that in every inorganic combination one of the elements enters as unity, is founded upon numberless experiments, and is a deduction from the analytical researches of some of the ablest chymists, particularly of Berzelius, who verified it in all the inorganic bodies which he analyzed." Again at page 23d, in speaking of the combinations of gaseous bodies in the proportions of 1 to 1, 1 to 2, 1 to 3, &c., the author remarks, that "the same result is observable in all the compounds of inorganic matter, one of the constituents of which is uniformly in the state of a single atom." Now it happens that there are some bodies which combine in two proportions with oxygen, and in these compounds the oxygen is in the ratio of 1 to $1\frac{1}{2}$, or there must be one atom of oxygen in one, and $1\frac{1}{2}$ atoms of oxygen in the other. This is the case with sulphur, iron, and a few other bodies. How is this difficulty surmounted? It may be got over in one of two ways,

either by inferring that in the two known compounds of sulphur, or iron with oxygen, the oxygen is in the ratio of 2 to 3, and that there exists another compound of oxygen and sulphur, or of oxygen and iron, consisting of one atom of each, which has not yet been discovered; or that one of the two compounds is composed of one atom of base and one of oxygen, while the second consists of two of base and three of oxygen. We shall dwell a little longer on these modes of obviating the difficulty of the half atom by illustrating them by the above examples; 100 parts of sulphur unite with 100 of oxygen, and form *sulphurous acid*; 100 of the former, with 150 of the latter, constitute *sulphuric acid*. Here the ratio of oxygen in the first acid is to that in the last, as 1 to $1\frac{1}{2}$. Hence, if the law stated by Dr. Macneven be adopted, and the sulphur be regarded in both instances as entering into combination with the oxygen, as unity or one atom, it is necessary to suppose the existence of a third compound, composed of one atom of sulphur and one atom of oxygen; then sulphur being unity, the ratio of oxygen will be 1, 2, 3. But does such a compound exist? Dr. Thomson thinks it does, and that it may be found in the salts which have been called *sulphuretted sulphites*. He calls it *hyposulphurous acid*, and this method of remedying the difficulty has been resorted to by Dr. Macneven. This acid however, so far as we know, has never been obtained in a separate state, and we may therefore legitimately doubt of its existence. Gay Lussac and Welter have lately discovered a new acid of sulphur, which they have called *sulphurin acid*; little is yet known of its composition, but it is supposed to be intermediate between that of sulphurous and sulphuric acids. The difficulty here stated is even greater when applied to the compounds of iron and oxygen, for there is no presumptive evidence that an oxide of this metal exists with a smaller proportion of oxygen than is found in the black oxide. Hence Dr. Thomson, the great champion of the atomic theory, has stated the composition of these oxides as follows:

Protoxide, 1 atom iron + 1 atom oxygen.

Peroxide, 2 atoms iron + 3 atoms oxygen.

He has therefore now done what Mr. Dalton did long before, admit that it is not fundamental to this theory that one of the elements of a compound should always be considered as unity.

We have made these observations, not from any wish to criticise the work of Dr. Macneven, nor to undervalue its merits, but merely to show that some caution must be exercised in adopting to the fullest extent the laws of the atomic theory as laid down by Berzelius.

We consider this little work of Dr. Macneven as one which required much labour in its formation; which has been executed with much science and skill, and which must prove a gift of no small value, not only to the students of the University in which he holds his office, but to all those who wish to become acquainted with the most interesting and important part of the science of chemistry. The author has given a faithful history of the origin and progress of the atomic theory; and in doing this he has necessarily quoted largely from Dr. Thomson, who early took up its cause with great zeal, and promulgated it with great success in his *Annals of Philosophy*.

The atomic theory, or, perhaps to speak more correctly, (for the theory of atoms has been rejected by him) the subject of definite proportions is indebted to no one more than to Professor Berzelius. Of course the *canons* of this distinguished chemist have been introduced by Dr. Macneven. They exhibit, in a remarkable degree, the power of generalization; and some of them may be considered as axioms in chemistry. Notwithstanding all this, notwithstanding the analyses of this philosopher are as accurate as they have been numerous, and he has proved himself the legitimate successor of the illustrious Scheele, the publication of his small work on *Mineralogy* is sufficient to convince us, that the greatest caution is necessary in the adoption of his canons, and that calculation can never be substituted for the results of experiment, nor ideal analysis founded upon principles, for the tangible products of the laboratory. The theory of definite proportions, we fear, will prove a stumbling block to chemists; for with the idea that calculation may in many instances take the place of or improve experiment, the processes of actual analysis may be lost in the imposing dress of mathematical formulæ, and chemistry be no longer the art which "interrogates nature."

The last pages of this work are occupied in the description of Dr. Wollaston's valuable *Scale of Chemical Equivalents*.

The *appendix* contains an account of various analyses executed by the pupils in the University, with their names affixed. We have not room to give the results, and shall merely observe that this plan is equally useful to them, and honourable to Professor Macneven. A chemist cannot be too soon acquainted with the processes of the laboratory; and we wish all possible success to the ingenious young men, who, while they benefit themselves, are willing to contribute their share to the public good.

SELECTIONS.

On the Organic Diseases of the Brain. By JOHN ABERCROMBIE, M.D. Fellow of the Royal College of Surgeons of Edinburgh.—Continued.

[From the Edinburgh Medical and Surgical Journal.]

SECT. II.—SECOND CLASS.—Pain, Affections of the Senses, Speech, or Intellect.

9. R. N. a shoemaker, aged 47. *Symptoms.*—Headach, and a feeling of weight in the head, which began in May 1816, increased by stooping, and even by the posture in which he sat at his work; increased gradually, notwithstanding copious evacuations. In August, had giddiness and dimness of sight; pulse natural. In September, sight more affected, could only see objects in a very strong light. In October, several attacks of delirium in the night time; pain still constant and severe; sight continued to diminish, and by the end of December was lost. About the middle of January, a degree of stupor and forgetfulness, pupil insensible. Died comatose on 31st. *Dissection.*—About $\frac{3}{4}$ iv. of fluid in the ventricles. A tumour, the size of a large egg, was attached to the tentorium, in such a manner that part of it lay above it, and part below it, the anterior part of the tentorium entering into its substance, to a considerable depth on its posterior part. On its upper part, the falx near its termination entered into it in the same manner. Internally, the tumour was firm, organized, and in colour resembled the structure of the kidney.

10. An officer who had seen much service. *Symptoms.*—Severe headach, which subsided after some time, leaving a feeling of tightness across the forehead. After six or eight months, sudden diminution of sight of the right eye, and soon after blindness of it; then blindness of the left eye. Under the operation of an emetic, the sight of the right eye was recovered for an hour; after this, continued perfectly blind, and pupils insensible, but had no other complaint except disordered stomach, and a frequent disposition to vomit. Pulse natural. Died comatose, two years after the commencement of the disease. *Dissection.*— $\frac{3}{4}$ iv. of fluid in the ventricles. A tumour, the size of a hen's egg, containing a thick purulent fluid, was situated

under the anterior part of the brain, and interposed between the optic nerves, which were much separated from each other by it. Below, it was attached to the pituitary gland, which was very soft, and enlarged to five or six times its natural size; posteriorly the tumour extended into the third ventricle. (Med. Trans. V. 223.)

11. A man, aged 30. *Symptoms.*—Excruciating headach, which commenced after hard work in a hay field. The pain was chiefly referred to the forehead, from which it extended over the left ear, but sometimes affected the right side of the head also, and occasionally the neck; most severe in the night; violent throbbing in the head. After six weeks his sight was much impaired, and soon after lost; face a little twisted to the left side; pulse little affected. Two months from the beginning of the complaint, he had an apoplectic attack, and died in two days. *Dissection.*—A tumour the size of a large walnut projected from the lower part of the anterior lobe of the left hemisphere of the brain. Internally it resembled an absorbent gland. The greater part of the medullary substance of the left hemisphere was reduced to a soft pulpy state, and was of a light brown colour. (Med. Trans. V. 241.)

12. A. M. a shoemaker, aged 50, for sometime affected with cough and bloody expectoration. In June 1818, was affected with headach and some confusion of thought, which appeared chiefly in a tendency to misapply words. The pain increased, attacked him in violent paroxysms, and was referred to the forehead, the sight of the right eye was impaired, and soon after lost; his speech became indistinct, and after some time inarticulate. Six weeks after the beginning of the complaint, all the symptoms were increased. Violent paroxysms of pain were excited by the least motion, even by change of posture in bed. He seldom attempted to speak, but often pressed his hand on his forehead, and he seemed to have uneasiness in his right arm. He had some squinting; general weakness and paleness; intellect impaired. Died comatose in August. Pulse had been usually natural, sometimes slow. *Dissection.*—In the substance of the left hemisphere of the brain, towards the posterior part, there was a soft and vascular sac, containing about 3ij. of a thick colourless albuminous fluid, coagulable by heat, and exactly resembling the albumen of an egg. The cerebral substance around the sac was softened; the brain in other respects was healthy. The ventricles contained a small quantity of serous fluid, and had no communication with the sac.

Many other examples of this class are on record, which it is not necessary to describe particularly, the symptoms being in

all very similar, viz. fixed pain in the head, gradual loss of sight, generally first in the one eye and then in the other after some interval, the intellect being frequently impaired in the advanced stages, and the disease fatal, either suddenly by convulsion, by coma of a few days continuance, or by gradual exhaustion. In a case by Platerus, fatal by gradual wasting, there was a tumour larger than an egg, compressing the origin of the optic nerves. In one by Drelincurtius, there was a steatomatous tumour, the size of a fist, between the brain and the cerebellum. In this case there were both blindness and deafness, and it was fatal suddenly by an apoplectic attack. In another, by the same writer, the pineal gland was enlarged to the size of an egg, and was of an earthy or stony structure.

SECT. III.—THIRD CLASS.—Pain, Affections of the Senses, and Convulsion.

13. A girl, aged 11, long liable to headach, and affected with weakness of sight, and a peculiar tenderness of the integuments of the head, in autumn 1814 received an injury of the forehead from a fall, and from that time suffered much from headach, with frequent epistaxis. About the end of December, headach increased in violence, with fever, intolerance of light and sound, squinting, and convulsive paroxysms, which for some time occurred every half hour. In March 1815, a great amendment took place, and for nearly a year she continued better in regard to the head symptoms, but affected with scrofulous sores on the neck, and on the leg. In May 1816, headach increased, with impatience of light and sound, squinting, gradual failure of sight, and at last blindness in July. She died in October, her intellectual faculties having continued unimpaired. Great intolerance of sound continued to the last, and remarkable acuteness of hearing. *Dissection.*—A tumour the size of a walnut rested on the sella turcica, and compressed the junction of the optic nerves. It was composed of a medullary substance of a yellowish colour, and was covered by a thin and delicate membrane. Considerable effusion in the ventricles.

14. A lady, aged 40, of a scrofulous habit. *Symptoms.*—Gradual failure of memory, of sight, and hearing; inarticulate speech; epileptic paroxysms, at first once in the fortnight, afterwards more frequent; her gait feeble and tottering; died in six months. A year before her death, she had been much stunned by a fall down a stair. *Dissection.*—A tumour the size of a small orange lay on the pars petrosa of the left temporal bone, inclining to the opposite side, and producing a great depression

in the substance of the brain. The 7th pair of nerves, and the branches of the 5th pair, were compressed and stretched by the tumour. Internally it consisted of a soft uniform substance, resembling the cineritious matter of the brain.*

15. A young man, aged 15. *Symptoms*.—Deep-seated pain in the head. After six months inarticulate speech; then three attacks of convulsion, each of ten or fifteen minutes duration; the last left paralysis of the right side, which disappeared next day. Died comatose in another month, having had repeated convulsive attacks, intense headach, impatience of light, afterwards dilatation of the pupils, deafness, paralysis of the eyelids, very difficult articulation, and some delirium. Pulse slow. *Dissection*.—Membranes of the brain very vascular; 3iv. of fluid in the ventricles. On the left side of the pons Varolii there was a hard tumour the size of a bean; cerebral substance round it was soft, approaching to suppuration. (Coindet sur l'Hydreceph. p. 98.)

16. A man, (age not mentioned.) *Symptoms*.—Severe headach, followed by amaurosis and epileptic paroxysms, which occurred almost daily; died in an apoplectic attack. *Dissection*.—On the inner surface of the left parietal bone there was an osseous spongy tumour, three inches broad, and more than an inch in thickness. (Wepfer, p. 508.)

17. A man, aged 35. *Symptoms*.—Severe pain, and sense of weight in the head for two years; copious epistaxis; lost the sense of smell; then frequent epileptic paroxysms, which continued for two years; died suddenly. *Dissection*.—On the anterior part of the right hemisphere, the substance of the brain was hard and callous, and adhered intimately to the dura mater. On the left side there was some extravasated blood. (Morgagni, Ep. ix. § 25.)

18. A man, aged 24. *Symptoms*.—Severe headach, with fever. Fever ceased, headach remained, with watchfulness and imbecility of the head, (vertigo?) Blindness of the left eye, and after a month of the right also. Convulsive paroxysms, which continued to recur for half a year; they then ceased, and he died of cough, with purulent expectoration, hectic fever, and wasting. *Dissection*.—Extensive disease of the lungs; much effusion in the brain. In the substance of the left hemisphere, there was a tumour larger than an egg, covered by a firm sac; internally it was white, firm, and uniform, resembling coagulated albumen, but harder; it weighed 14 drachms. (Fel. Platerus, L. I. 108.)

* For Cases 13th and 14th, I am indebted to Dr. Hay, under whose care they were.

19. A man, aged 26. *Symptoms*.—Severe headach, most distressing when lying on left side, and giddiness; occurring in paroxysms. After several months, pain increased, with defective vision; dilated pupil; pain increased by motion; paroxysms of giddiness, with loss of speech and blindness during the paroxysm, and stiffness of the limbs: then double vision; violent pain in the neck, with convulsive paroxysms, affecting the muscles of the neck, and drawing the head violently backwards. Two months after this, he had numbness and spasmodic motions of the superior extremities. Died suddenly in a fit resembling epilepsy seven or eight months after the commencement of the disease. *Dissection*.—A hard tumour, two inches long, and an inch and a half broad, was firmly attached to the tentorium, and imbedded in the posterior lobe of the left hemisphere of the brain. It contained 3i. of greenish pus. Substance of the brain near it was very soft, and broken down. Where the tumour pressed against the occipital bone, the dura mater was obliterated, and the bone rough. 3ij. of fluid in the ventricles. (Clarke, Ed. Journ. VI. p. 275.)

20. A woman, aged 23. *Symptoms*.—After suppressed menstruation, violent headach, imperfect vision, dilated pupils, and after some time blindness. Repeated convulsive attacks, after one of which, she lost her speech for two days. Died comatose about four months after the commencement of the complaint. Intellect entire, till a few days before death. *Dissection*.—On the surface of the right hemisphere there were three hardened spots, each an inch in diameter. They constituted a part of as many tubercles which extended into the medullary substance of the brain. A similar tubercle was imbedded in the substance of the hemisphere, and one smaller on the surface of the left hemisphere; slight effusion in the ventricles. (Powel, Med. Trans. V. 219.)

21. A woman, aged 19. *Symptoms*.—Headach, vertigo, suffusion of the eyes; paroxysms in which she fell down insensible without convulsion. They attacked her once in three weeks, and at each time there were two paroxysms at the distance of twelve hours. After eight or nine months these attacks increased in severity. She lost her hearing, and then her sight, first of the right eye, and after fourteen days of the left also; then lost her smell. Speech and deglutition were much impaired. Soon after this died apoplectic. *Dissection*.—Imbedded in the substance of the right hemisphere, there was a hydatid three inches long and two broad, and very vascular; brain in other respects healthy. (Med. Ch. Trans. II. 260.)

SECT. IV.—FOURTH CLASS.—Convulsions without affections of the senses. Intellect sometimes impaired.

22. A woman, aged 43. *Symptoms*.—Headach; spasmodic affections of the limbs; after seven months was confined to bed; violent paroxysms of headach; loss of memory. Convulsive attacks more frequent; at last several times a day. Died suddenly in one of them, six or seven weeks after she was confined to bed. *Dissection*.—3iv. of fluid in the ventricles. A tubercle the size of a nut in the left lobe of the cerebellum; surrounding substance much softened. (Rochoux sur l'Apop. p. 151.)

23. A man, aged 60. Epileptic for six years, with loss of memory. Died suddenly. *Dissection*.—A hydatid the size of a pigeon's egg in the substance of the posterior part of the right hemisphere. It contained a yellowish fluid, which was partly gelatinous. Substance of the brain under it was hardened. (Lancisius de Sub. Mort. Cap. xi.)

24. A boy, aged 16 months, formerly healthy, was seized with an attack of convulsion. It affected chiefly his right side, which was very strongly convulsed. He had a second attack on the evening of the same day, after which he had fever, blindness, and loss of the power of deglutition. In this state he continued, supported by glysters, for ten days, when he had another fit; and after this he gradually recovered the power of vision and deglutition. From this time there was a degree of paralysis of the right side, but in other respects, he enjoyed good health for four years. He then became affected with epileptic paroxysms, which at first occurred once in two months, but gradually increased in frequency. After a longer interval than usual, a few weeks before his death, the fits returned after a fright, recurred with great frequency, and were fatal. He was then twelve years of age; his right side had continued weak; and at the time of his death, the right lower extremity was three inches shorter than the other. His intellectual faculties had been weak, so that he never could be taught to read. *Dissection*.—On the surface of the brain, under the left parietal bone, there was a tumour the size of an egg. It was situated between the pia mater and the arachnoid membrane. Internally, it was of a white, and somewhat gelatinous appearance, but very firm, and when cut into, some serous fluid was discharged from it; no effusion.*

25. A woman, aged 50. Epileptic for 30 years. Was seized with a cough, which excited acute pain under the upper

* For this case I am indebted to Dr. Beilby.

part of the occipital bone. In one of the epileptic fits she received a violent blow on this spot. From this time she was never free from suffering; and after six weeks, a tumour appeared on the spot, which pulsated. It could be pressed back into the cavity of the cranium, and this produced coma. After several months, she had palsy of the right arm, and both lower extremities, and soon after died. *Dissection.*—The tumour was generated in the substance of the dura mater. It projected inwards into a hollow on the left hemisphere, and outwards through an opening in the bone, which was two inches in its long diameter, by one and a half. The dura mater near it was remarkably vascular. (Marigney, *Mem. de Chir.* p. 26.)

It is unnecessary to detail particularly the cases of this class. They present the usual symptoms of the epileptic paroxysm, occurring at various intervals, and in various degrees of severity, sometimes accompanied by violent attacks of headach, and sometimes with little uneasiness in the head. They are sometimes fatal suddenly in one of the fits, and sometimes by coma. A variety of morbid appearances have been observed in such cases. Portal found a remarkable induration of the pons Varolii. In a case by Sandifort, there were three tubercles on the dura mater, near the sagittal suture, on the right side, and in the anterior part of the right hemisphere, a sebaceous tumour, the size of a walnut. In a case by Lieutaud, there were seven sarcomatous tumours near the longitudinal sinus; and in another a glandular tumour, the size of a bean, in the substance of the right corpus striatum. In a young man, mentioned by M. Poupart, in whom the fits occurred once a week, there was "a thick, white substance, harder than jelly, under the dura mater." In a man mentioned by Lamotte, who died of an abscess of the lungs, after being many years epileptic, several sharp, bony spiculæ were found between the dura mater and pia mater, their points being directed against the pia mater. Several cases of the same kind are referred to by Van Swieten, in one of which there was an irregular piece of bone in the substance of the cerebellum, an inch long and half an inch broad. In a case by Dr. Anderson, in which epilepsy came on after a severe injury on the back of the head, the posterior part of the brain, in both hemispheres, was found inflamed, and much hardened, with thickening of the membranes. A modification of epilepsy is met with, in which the convulsion is confined to one side of the body. In a case of this kind, by Dr. Anderson, a portion of the brain, on the opposite side, was much indurated, with adhesion and thickening of the membranes. The same peculiarity in the symp-

toms occurred in Dr. Beilby's case, (case 24.) The following case, by Lieutaud, differs from these epileptic affections.

26. A man, aged 30. Had violent headach for three months, then violent convulsions, which were soon fatal. *Dissection.*—The longitudinal sinus, externally and internally, was covered with innumerable small glandular grains. Similar bodies were found on the choroid plexus. In the fourth ventricle there appeared a tumour the size of an egg, formed by a congeries of innumerable hard glandular bodies, verging to suppuration. Nearly the whole of the cerebellum had the same appearance.

SECT. V.—FIFTH CLASS.—Symptoms in the Head, with Paralysis.—Hemiplegia.

27. A man, aged 36. *Symptoms.*—Occasional attacks of severe pain in the head, shooting from behind forwards. After a few months, he found, on awaking one morning, double vision. After a few days more, his right hand was weak, and the weakness, with numbness, extended gradually over the whole right side, with distortion of the mouth, and inarticulate speech. The left eye was drawn towards the nose. Pulse natural. About two months from the commencement of the paralysis, he became convulsed. The convulsion returned at short intervals, and he died in 24 hours. *Dissection.*—On the left side of the tuber annulare there was a tumour the size of a hazel nut. It was lying on, and sunk into the tuber. It extended to the left corpus pyramidale, compressing it and the abductor nerve, and was closely attached to the basilar artery. A small coagulum was formed within the artery, at this place, and its coats were very soft. The tumour was in a state of imperfect suppuration. (Yelloly, Med. Ch. Tr. I. 181.)

28. A man, aged 63. *Symptoms.*—Six months after a severe blow on the head, had pain and sense of weight in the head, at first coming in paroxysms, then more permanent, with slight weakness of the right side, and transient loss of recollection. Symptoms increased very gradually to paralysis of right side, loss of speech, twisting of the mouth to the left side, and great failure of intellect. Died comatose more than two years from the commencement of the disease. Coma had continued a week. *Dissection.*—On the outer and anterior part of the left hemisphere, there was a tumour the size of an egg, and full of blood, "which seemed to be contained in it in some places, as it is in the spleen;" in others it was in small clots, a line or more in diameter, very firm, of a cellular texture, and greyish colour, resembling tubercles. The tumour

in general was of a red-brown colour, and very firm. It adhered slightly to the dura mater and the arachnoid, which was red and thickened where it covered the tumour. Below, it was imbedded in the substance of the hemisphere, and the cerebral matter was softened. 3i. of fluid in the ventricles. (Rochoux, p. 149.)

29. A boy, aged 11. *Symptoms*.—Sudden attack of dimness of sight, amounting to blindness. It went off in a few minutes, but from that time his sight was gradually impaired, and after a year nearly lost. He then had an affection resembling chorea; and after a short time suffered an attack in which he lay speechless for three days. This was followed by hemiplegia of the right side. He complained much of his head, which appeared to his friends to enlarge; and he sometimes lost his speech for two or three days. His intellect was not affected, but at times was extremely acute. He died after coma of five weeks continuance, about a year after the attack of hemiplegia, and two years from the commencement of the disease. *Dissection*.—On the surface of the left hemisphere the membranes adhered firmly to the surface of the brain for some extent on the middle lobe. On raising them at this place, fluid escaped in great quantity; and, on farther examination, it was found to have been discharged from the cyst of an immense hydatid, which was seated in the left lateral ventricle, and had gradually advanced to the circumference of the brain. It contained about 3xvj. of limpid fluid, and, besides this, there were several ounces in the proper cavity of the ventricle.*

The cases of this class that are on record present little variety in the symptoms. They are generally headach, with or without affections of sight; and after some time weakness of the muscles of one side, which gradually increases till it amounts to paralysis. In a case of this kind by Bonetus there was a tumour three inches long attached to the side of the third sinus. Another, exactly similar, is related by Blancardus. A gentleman, mentioned by Mr. Gooch, along with a variety of nervous symptoms, had an excruciating pain of one arm, beginning at the finger ends, and gradually ascending as high as the insertion of the deltoid. The arm at last became paralytic, and soon after he died in convulsions. On dissection two small encysted tumours were found on the surface of the brain, on the opposite side to the affected limb. The other parts were healthy.

* For this remarkable case I am indebted to Mr. Headington of London.

SECT. VI.—SIXTH CLASS.—Symptoms in the Head, with Paraplegia.

30. A boy, aged 7, (for whose case I am indebted to Dr. Gregory,) in the beginning of the year 1811, received a violent injury of his forehead and nose by a fall. From that time he had headach. After two or three months he became near-sighted. Soon after his sight became indistinct, and after four or five months more this was followed by blindness. About this time he began to be epileptic, and affected with weakness of the lower extremities, which gradually increased to perfect paraplegia. He died in April 1812, after coma of three days, his intellect having continued entire till that time. *Dissection*.—A firm, white, flat tumour, like a large bean, lay over the junction of the optic nerves. The ventricles contained $\frac{3}{4}$ of clear fluid. The left lobe of the cerebellum was much indurated, like scirrhus; the right lobe was reduced to a mass resembling scrofulous pus.

31. A man, aged 48. *Symptoms*.—Acute headach for a year, followed by paralysis of both lower extremities, the superior extremities being sound. Died suddenly about five months after the commencement of the paraplegia. *Dissection*.—The left lobe of the cerebellum was almost entirely scirrhous, of a pale flesh colour, and seemed to be composed of numerous small corpuscles closely compacted, without any interstice or any appearance of vessels. A small part only on the upper surface was in a healthy state. The corpus callosum, fornix, and some of the other central parts of the brain, were much softened and broken down. (Morgagni, (lxii. 15.)

32. A man, aged 35. *Symptoms*.—Pain in the head, which after some time fixed chiefly in the occiput, extending down the neck. Occasional vertigo and sickness. After five months, hemiplegia of the left side; imperfect vision. Headach continued, though less severe. Hemiplegia diminished gradually; and after five or six months more he became liable to fits of stupor, which were preceded by violent pain and vertigo, and occurred sometimes twenty times in a day. Blindness of right eye, failure of memory, then paraplegia, and, a fortnight before his death, paralysis of the upper extremities also. The duration of the complaint was a year and eight months. *Dissection*.—On the surface of the pons Varolii there were two triangular fleshy tumours nearly united by their apices. The base of the one extended into the right crus cerebri, that of the other into the medulla oblongata. The disease penetrated the substance of the pons. There was much effusion under the arachnoid membrane. (Ed. Journ. XI. 470.)

33. A man, aged 63. General and complete paralysis of the whole body, which came on gradually and insensibly, without any evident cause. Speech indistinct. Mind entire to the last. Died of gangrene of the nates. *Dissection*.—A tumour the size of a hen's egg was lodged in the medullary substance of the left hemisphere, betwixt the fissure of Silvius and the part which rests upon the tentorium. It was contained in a cyst, and was internally of a brownish colour and hardy consistence. (Bull. Facult. Med. May 1816.)

SECT. VII.—SEVENTH CLASS.—Prominent Symptoms in the Digestive Organs.

34. An officer, aged 27. *Symptoms*.—Constant nausea and frequent vomiting. A slight thickening of the pericranium. Headach and general indisposition. After a considerable time numbness of the right side. Five weeks after this died suddenly in the night. *Dissection*.—The dura mater covering the cerebellum at its posterior and inferior part was thickened and cartilaginous. This diseased state had communicated itself to that part of the cerebellum lying in contact with it, and had extended considerably into its substance. Other parts of the cerebellum softened. Membranes of the spinal cord hard and thickened. Thoracic and abdominal viscera were sound. (Med. Repos. Vol. VIII. p. 398.)

35. A medical man, in the meridian of life, had been for a year liable to attacks of dyspepsia with headach. In October 1815, he had severe headach with fever, relieved by blood-letting. After this he had various uneasy feelings which he referred to his liver; complete want of digestion, headach, and frequent vomiting, which occurred chiefly in the morning, and general emaciation. In July 1816 he visited London and Cheltenham, at both which places the first practitioners ascribed his complaints to “irregularity of the functions of the liver.” In August headach increased, nothing agreed with his stomach, almost every thing was vomited. After some time the pain was much relieved, and the prominent symptoms were the morning sickness and vomiting, with increasing emaciation. Bowels torpid, frequent eructations, and hiccup. In the end of September had twice a slight convulsion. Headach periodical. Mind entire. Conversation induced headach, and sometimes convulsion. 9th October, died suddenly in convulsion. *Dissection*.—3iv. of fluid in the ventricles of the brain. On the inferior part of the left lobe of the cerebellum, there was an encysted tumour the size of a French walnut, besides a vesicular portion connected with it, containing some yellow

serum. The tumour was invested both by the pia mater and dura mater, and was attached by a small pedicle to the substance of the cerebellum, where it had formed a depression in which it was imbedded. On the corresponding part of the opposite lobe there was a small florid tumour the size of a large pea. The abdominal viscera were sound. (Med. Repos. Vol. VII. p. 92.)

Many other cases are on record, in which the only morbid appearances were in the head, though some of the most prominent symptoms had been in the stomach. Some of these resembled what has been called the sick-headach; others were chiefly distinguished by remarkable disturbance of the digestive functions. There is generally more or less headach, with various uneasy feelings in the head; but these symptoms are sometimes not urgent, and many of the cases have, through a great part of their progress, been referred to the digestive organs, the symptoms in the head being considered as symptomatic. A boy of 14, mentioned by Mangetus, had loss of appetite, obtuse headach, debility, and emaciation, then vomiting with more acute headach, and died after various intermissions. Three tumours were found in the brain; one in the situation of the corpora quadrigemina, and two others the size of walnuts in the substance of the brain. A young man mentioned in the Medical Observations and Inquiries, Vol. VI. had various complaints in his head and bowels which were ascribed to worms. After some time he had attacks of stupor and forgetfulness, and died delirious. The only morbid appearance was ossification of no great extent in the dura mater, with appearances of inflammation in the membranes. Similar ossification in the falx was found by Dr. Lettson (Mem. of the Med. Soc. of London Vol. III. p. 44.) as the only morbid appearance in a gentleman who had been long affected with a train of obscure complaints, the most urgent of which were obtuse headach, with frequent vomiting. On the other hand, it is to be kept in mind that similar ossifications have been met with in cases in which there existed no symptoms that could be ascribed to them. This part of the subject, therefore, is involved in great obscurity.

SECT. VIII.—EIGHTH CLASS.—Vertigo and Apoplectic Symptoms; Slight and Transient Apoplectic Attacks.

36. A man, aged 36. *Symptoms.*—After a wound on the head, which healed readily, constant headach for five years and a half; then fits of stupor, which came on at uncertain intervals, sometimes twice a-week, sometimes once a-fortnight; they generally lasted about an hour and a half; he had warn-

ing of their approach so as to lay himself down. In the intervals all the functions were natural. After seven or eight months the paroxysms became more frequent, and he died suddenly in one of them. *Dissection.*—A scrofulous tumour, larger than a hen's egg, lay in the middle of the left hemisphere of the brain, extending, in depth, to nearly on a line with the corpus callosum. It seemed to be merely a part of the brain in an indurated state. A piece of bone, the size of the finger nail, was attached to the left side of the longitudinal sinus. The veins on the left hemisphere were more distended with blood than those on the right. (Med. Ch. Tr. IV. 188.)

37. A woman, aged 23. *Symptoms.*—Severe headach, constant vertigo, nausea, occasional vomiting, frequent rigors, pain and deafness of the left ear, and the left eye somewhat affected. After several months the headach increased, with occasional paroxysms of coma, and she died at last rather suddenly, having been for a day or two affected with extensive erysipelas of the head and face. *Dissection.*—A remarkable tumour under the base of the brain, on the left side; it consisted of three portions; the anterior was the size of an egg, of a pink colour, and composed of a spongy vascular substance, like the texture of the placenta, interspersed with small cysts, containing puriform fluid; the posterior portion was half the size of the former, and nearly similar in structure, but firmer; the middle portion was the size of a walnut, of a white colour, and nearly cartilaginous structure. On the petrous portion of the temporal bone, where the tumour rested, the osseous substance was absorbed to the depth of half an inch.

38. A lady, aged 64. *Symptoms.*—Attacks of headach, giddiness, and imperfect vision, occurring at uncertain intervals; afterwards nausea; at last, after five years, death, with fever and delirium. *Dissection.*—Two small aneurisms, each about 5-8ths of an inch in diameter, formed by dilatation of the internal carotid arteries, by the side of the sella turcica, and containing laminæ of coagulated blood. (Trans. of Soc. II. 193.)

39. A man, aged 20. *Symptoms.*—Feeling of weight in the head, frequent attacks of vertigo, followed by great weakness, prickling of the left arm, with coldness and wasting of it, and the pulse in that arm was much weaker than in the other. Found dead in bed. *Dissection.*—Brain indurated in several places; ventricles full of a puriform fluid; cerebellum covered with a cartilaginous concretion, the thickness of a six-livre piece. (Portal sur l'Apop. p. 144.)

40. A man, aged 73, (for whose case I am indebted to Dr. Hunter,) about six months before his death, began to be affected with headach, and occasional attacks of giddiness and loss of recollection. He did not generally fall down, but sometimes continued walking without knowing whither he was going; at other times the attack resembled intoxication. He generally recovered his recollection in a short time. His gait was feeble and tottering, and the attacks gradually increased in frequency and in violence. At length, after one of them, more severe than usual, he was confined to bed with violent pain of the forehead, giddiness, and loss of memory; pulse 78. Bloodletting, purgatives, blistering, &c. were employed without relief; the fixed pain of the forehead continued; he became restless and incoherent, and about the 12th day from his confinement, was affected with severe pain, and partial paralysis of the left arm and leg. After three days more he had general and severe convulsion; he then lay for six days in a state of increasing weakness, but able to answer questions distinctly. After this the convulsion returned with perfect hemiplegia and coma, and he died in two days. *Dissection.*—Membranes of the brain very vascular. 3ij. of fluid in the ventricles; cerebral substance very firm. In the posterior lobe of the right hemisphere, there was a firm tumour the size of a small pigeon's egg; internally, of a pale flesh colour, and granular texture. It was not inclosed in a distinct capsule, but for a considerable part of its circumference it was covered by a texture resembling the fibrous bands of carcinoma. The tumour communicated with the ventricle, so as to form part of the wall of the posterior and inferior cornua, and the margin of the pes hippocampi, where it is about to descend into the inferior cornu, was attached to it. The pia mater lining the ventricle was at this place very vascular.

Many cases are on record which belong to this class, and the principle difference that they exhibit in the symptoms is, that in some of them we find constant uneasiness, with vertigo, resembling the apoplectic tendency, in others frequent and transient apoplectic attacks, the patient, in the intervals, sometimes enjoying tolerable health, in other cases complaining of a slight and habitual giddiness, commonly called weakness of the head, often accompanied by unsteadiness of the limbs. In a case of the first kind, by Zeder, he found numerous hydatids in the brain, one particularly, in the passage to the aqueduct of Silvius, larger than a hen's egg, and containing within it three smaller hydatids. Of the other class of cases, distinguished by frequent and transient apoplectic attacks, I have

formerly given a remarkable example, in which there occurred a tumour formed by thickening of the dura mater; and I have quoted, from Lancisius, the case of a gentleman who had an apoplectic attack once or twice every month, connected with thickening of the membranes, and a polypous tumour under the frontal bone. Various other modifications occur of this form of the disease. A gentleman mentioned by Gooch had been for several years liable to attacks, in which there was sometimes a shaking of the head, and a kind of emprosthotonos, at other times he became vertiginous, and fell down deprived of sense for a short time. He was never entirely free from headache, and brisk exercise excited giddiness, which went off immediately upon resting. He died suddenly in convulsion, and on dissection there were found several osseous points arising from the right parietal and occipital bones, and irritating the dura mater, which was inflamed and beginning to mortify. (Gooch's Appendix, p. 237.)

To this class also belong the cases in which, connected with organic disease in the brain, there has occurred a gradual abolition of the mental faculties, with little complaint of pain, or any other urgent symptom. In a case of this kind, which terminated in perfect stupidity or lethargy, Platerus found a firm fleshy-looking tumour the size of a moderate apple, above the corpus callosum. (Plateri, Obs. Lib. I. p. 13.)

To this very imperfect view of the important subject of organic disease of the brain, I shall only add a tabular view of the cases which have been either described or referred to. From this it will appear, that it is difficult or impossible to fix upon any general principles, or to refer the particular character of the symptoms to any thing in the nature or seat of the disease, and that the whole subject is still involved in much obscurity. Tumours, for example, will be found under the first class, some of them of large size, unaccompanied by any remarkable symptom; while tumours in the same situation, under the other classes, were accompanied by blindness, convulsions, or paralysis. It does not appear, that these diversities depend upon the size of the tumours, or, as far as we know, upon their particular structure; but these points remain to be investigated, particularly what diversity of symptoms are connected with the nature of the tumours, and especially with their characters, as being tumours distinct from the cerebral mass, or as being indurations of part of the brain itself.

Many of these cases seem to illustrate the doctrine which I formerly proposed in regard to pressure on the brain. I have

contended, that causes which are supposed to act in this manner, produce their effects, not by compression of the cerebral matter, but by their influence upon the blood-vessels of the brain, in destroying that relation betwixt the arteries and veins of the brain, which, in an organ closely confined in a cavity of bone, must be essential to a healthy state of the circulation. I have endeavoured to trace the manner in which compressing causes may exist in a very considerable degree, without thus affecting the circulation, and, consequently, without producing coma; and I have mentioned cases, which I think could only be explained on this principle, in which extensive effusion existed in the brain, without coma. I see no other principle on which we can account for many of the cases of organic disease. In some of them, tumours of a great size were fatal, without coma; and in many more, though coma existed for a short time before death, there was every reason to believe that it was connected with a recent inflammatory action, and did not depend immediately on the original disease.

In regard to the treatment of these diseases, there is little to be said. I am persuaded, however, that we ought not to consider them all as hopeless. Many of them certainly have their origin in inflammatory action, and, by the proper treatment, we have every reason to suppose that their progress may at least be impeded, and the life of the patient prolonged, as well as rendered more comfortable. This treatment will consist in keeping the system extremely low by evacuations and spare diet, cold applications to the head, issues or setons in the neck, and avoiding all causes of excitement.

TABLE OF CASES OF ORGANIC DISEASE OF THE BRAIN.

Prominent Symptoms.	Morbid Appearances.
Long continued headach, without any other urgent symptom.	<p>Tumour, five inches in circumference, attached to the falx.</p> <p>the size of a walnut, behind the medulla oblongata.</p> <p>the size of a pigeon's egg, at the upper and middle part of right hemisphere.</p> <p>three inches broad, adhering to the membranes, by the side of the third sinus.</p> <p>hard, irregular, and of a stony consistence, near the torcular.</p> <p>stony, like a mulberry, in substance of the brain.</p> <p>the size of a nutmeg, in the seat of the pineal gland.</p> <p>the size of a pigeon's egg, in the substance of the cerebellum.</p> <p>Small triangular ossification in the falx.</p>
Headach. Blind- ness.	<p>Tumour, the size of an egg, attached to the anterior part of tentorium.</p> <p>the size of an egg, between the optic nerves.</p> <p>the size of a large walnut on lower and anterior part of left hemisphere.</p> <p>larger than an egg, compressing the optic nerves.</p> <p>the size of a fist between the brain and cerebellum.</p> <p>Pineal gland enlarged to the size of an egg, and of an earthy consistence</p> <p>Cyst in left hemisphere, containing 3 j of pure albuminous fluid.</p>
Headach. Blind- ness. Convulsion.	<p>Tumour, the size of a walnut, on the sella turcica</p> <p>the size of a small orange, on petrous portion of left temporal bone</p> <p>the size of a bean, on left side of pons Varolii.</p> <p>osseous, three inches broad, on inner surface of left parietal bone</p> <p>larger than an egg, in the substance of left hemisphere</p> <p>two inches long, in posterior lobe of left hemisphere.</p> <p>Four hard tubercles, each an inch in diameter, in right hemisphere, and one in right</p> <p>Cyst like a hydatid, three inches long, in substance of right hemisphere.</p>
Headach. Con- vulsion. Loss of Smell	<p>Tumour in the substance of anterior part of right hemisphere.</p>
Headach. Con- vulsion.	<p>Tumour, the size of a nut in the left lobe of the cerebellum.</p> <p>the size of an egg, in the fourth ventricle.</p>

Prominent Symptoms.	Morbid Appearances.
Epilepsy. -- the convulsion confined to the right side of the body.	<p>Tumour of the dura mater, projecting outwards through an opening in the bone</p> <p>Hydatid, the size of a pigeon's egg, in posterior part of the right Induration of pons Varolii. [hemisphere.</p> <p>_____ of posterior part of both hemispheres.</p> <p>Three tubercles in dura mater, on right side, and one in right hemisphere.</p> <p>Seven sarcomatous tumours near longitudinal sinus, and one in corpus striatum</p> <p>Firm gelatinous substance under dura mater.</p> <p>Bony spiculæ between the dura mater and pia mater.</p> <p>Irregular piece of bone in cerebellum, one inch long, and half an inch broad.</p> <p>{ Tumour, the size of an egg, on surface of left hemisphere.</p> <p>{ Induration of part of left hemisphere, with thickening of dura mater.</p>
Head symptoms, with Hemiplegia.	<p>Tumour, the size of a hazel nut on left side of tuber annulare.</p> <p>_____ the size of an egg, on surface of anterior part of left hemisphere.</p> <p>_____ three inches long, attached to the third sinus.</p> <p>Two encysted tumours on surface of brain, (palsy of the arm only.)</p> <p>Large hydatid in the left ventricle.</p>
Do. with Paraplegia.	<p>Induration of left lobe of cerebellum, and suppuration of right.</p> <p>Scirrhus of left lobe of cerebellum.</p> <p>Tumour, the size of an egg, in left hemisphere, (universal paralysis.)</p> <p>Two tumours on the pons Varolii.</p>
Stomach remarkably affected.	<p>Induration of surface of cerebellum, with thickening of membranes.</p> <p>Tumour the size of a walnut, under the cerebellum.</p> <p>_____ in seat of corpora quadrigemina, and two in substance of Ossification in dura mater. [brain.</p> <p>Ditto in falx.</p>
Comatose or apoplectic attacks.	<p>Tumour, larger than an egg, in left hemisphere.</p> <p>_____ remarkable lobulated, under base of brain, on the left side.</p> <p>_____ five inches long, from thickening of dura mater, on top of right hemisphere.</p> <p>_____ size of a pigeon's egg in posterior part of right hemisphere.</p> <p>_____ Polypus under the frontal bone.</p> <p>Two small aneurisms of internal carotid.</p> <p>Induration of brain in various places.</p> <p>Numerous hydatids in the brain.</p> <p>Ossæous projections from the inner surface of the occipital and right parietal bones.</p> <p>Tumour, the size of an apple, above the corpus callosum, (gradual loss of intellect.)</p>

Cases where Arsenic was accidentally swallowed by three Maid servants, and in which the poisonous action was succeeded by singular nervous affections. By ALEXANDER M'LEOD, Esq. Surgeon, North Uist.

ON Friday the 17th of July 1818, I was called to the Island of Vallay, North Uist, to visit three maid servants, who were said to have swallowed poison on the evening of the preceding day. On my arrival, Mrs. Macdonald gave me the following account of the accident. About four o'clock of the evening of Thursday the 16th instant, Marion Mylis observed a brown substance, about the size of a walnut, on the lobby floor, which she took up, and supposed to be brown sugar. She instantly tasted it, and carried it where Kitty Macintyre and Anne Murray were spinning. She gave each of them a portion "of the sweet-meat she had found." Accordingly the three eat all she had picked up. They were soon after seized with violent retching, vomiting, and excruciating pain in the region of the stomach.

On their situation being made known to Mrs. Macdonald, she concluded that what they had swallowed was of a poisonous quality, and therefore gave them large and repeated draughts of chamomile infusion, which was continued till they began to vomit blood; she then made them drink a quantity of warm milk, and gave 40 gt. of laudanum to each. They continued in great distress all the evening and during the night, complaining of heat and excruciating pain in their chests and throats, accompanied with a sense of stricture in the latter, with difficulty of swallowing, together with violent purging and discharge of blood by the anus. At bed-time, Mrs. Macdonald gave them again another dose of laudanum. They got some respite during the night; and, on my arrival at nine o'clock A. M. Friday the 17th, I found them much easier, but complaining of pain in their chests, accompanied by heat and lancinating pain in their throats; and by profuse perspiration, and general debility. They had great thirst, and complained of pain in their teeth. I also observed purple petechiæ on their chests and necks.

I gave each of them a dose of castor oil, and ordered them to drink freely of warm milk or barley water. Towards evening, perceiving symptoms indicative of inflammation of the stomach in Marion Mylis, and her pulse being 104, and strong, I took eight ounces of blood from her arm, by which her pulse was reduced to 94, and she seemed to be much relieved.

I ordered them to take every hour a table spoonful of a mixture of the carb. potass. puriss. and sulph. sublim., which was continued so long as they had the power of swallowing.

Saturday the 18th, they all got out of bed, and found their complaints mitigated, but not removed. The physic given them the preceding evening operated during the night. I ordered each of them to take 12 gr. of the sulphuret of potash every two hours, in addition to the mixture of sulphur and potash prescribed the preceding day, and the physic to be repeated at night; also to continue taking the warm milk, which they drank in great quantities.

I was at this time called to see a patient at some distance. Between the hours of twelve and one in the afternoon, all their former symptoms increased in each of them, almost at the same time, viz. vomiting, purging, excessive pain in their stomachs, heat and pain in their throats, together with inflammation and swelling, internally and externally, about the root of their tongues. About three o'clock, Anne Murray lost the power of speech and swallowing, and shortly after her jaws became locked, accompanied by convulsive spasms over the rest of the body. About half past three o'clock, Marion Mylis became affected with similar symptoms. Kitty Macintyre, about the same time, lost the power of speech and swallowing, though her jaws did not appear to be locked. They continued in this state during the night, and no medicine could be administered.

Owing to indisposition, I had it not in my power to see them before nine o'clock in the morning of Sunday the 19th, when Mr. Donald Macqueen, surgeon, South Uist, accompanied me. We found Anne Murray in a state of apoplexy; breathing laborious, with convulsive startings all over her body; her jaws firmly locked; countenance pale and squalid; pulse 90, and feeble; and she was apparently insensible to external objects. We removed her to a cooler apartment, applied a large blister to the pit of her stomach, and another below the chin; took four ounces of blood from one of the jugular veins, and ordered her a strong injection. In about an hour thereafter, she could move her jaws, when the physic and sulphuret of potash were ordered as formerly. At twelve o'clock, I sprinkled her face with cold water, which had the effect of rousing her out of the comatose state she was in. She spoke to us at one o'clock, and complained of a violent headache, together with heat and pain in her throat. Her medicines were continued, and her feet were immersed for some time in warm water. She continued to recover the whole of this day.

At the time above mentioned, viz. nine o'clock in the morning of Sunday, we found Kitty Macintyre speechless, without the power of swallowing, and with her hand carried constantly towards her throat; her face was flushed; her pulse 104, and full; which determined us to take some blood from her arm. Before an ounce came away, she spoke, and said, Thank God I am relieved. We bled her to the extent of eight ounces; her medicines were repeated; and she continued tolerably easy during the evening, but occasionally complaining of headache.

On visiting Marion Mylis, at said time, we found her speechless, without the power of swallowing, her hand pointing to her throat, with occasional convulsive spasms over her body; her jaws were fixed, and she smiled frequently; her face was flushed; pulse 106, and strong. From seeing the good effects of bleeding in the other two cases, we drew off seven ounces from her arm. On the vein being opened, symptoms of hysteria came on, the spasms became stronger, her jaws more firmly fixed, and she smiled continually. These symptoms, however, wore off in a short time, and she recovered the power of speech and swallowing. The above medicines were given as formerly, and she passed a good night.

Finding them all in a fair way of recovery on the morning of Monday the 20th, I took my leave for that day. But, at nine o'clock in the evening, Anne Murray and Kitty Macintyre were nearly at the same time both seized with violent headache, succeeded soon after by high delirium, being insensible of their own situation, unmanageable, and not knowing any of their attendants. They listened to what was said to them, but always gave foolish answers to any questions that were asked. I found them in this state at four o'clock of the morning of Tuesday the 21st. But, as their pulses were very feeble, I did not venture to take any more blood. I gave to each of them a dose of salts, applied a large blister to the nape of their necks, ordered their feet to be immersed in warm water, gave them draughts of gruel, with some nitre. But finding, after a trial of five hours of these remedies, that they did not receive the least benefit,—at the same time judging that these secondary symptoms indicated inflammation of the brain,—I determined to try the effects of the affusion of cold water. I accordingly poured some of this several times over the head of the strongest of them, (Kitty Macintyre,) kept at the same time a towel dipped in the cold water to her head. The effects were almost instantaneous. Before the application of the water was continued for any length of time, a degree of shivering and gentle hiccough came on, when she recognized all in the room, became calm, and spoke

perfectly sensibly. She said she had no pain, but felt a giddiness in her head, and general languor. Shortly after, she fell asleep, and awakened quite composed. I tried the same remedy, with some confidence, in the case of Anne Murray, and the result was exactly similar. Marion Mylis, who was in a separate house, on hearing that the other two were delirious, became so also, though not in so violent a degree. She continued in this state from the preceding day till the affusion of the cold water was used, when the same happy result followed as in the other two cases. This treatment was continued for some days, together with some doses of physic. They gradually recovered strength, without any return of their complaints, from this date; and are now (three months after the accident) in good health.

On the day the accident happened, Mrs. Macdonald made a search, and found more of what had been swallowed near the place where the rest had been picked up by Marion Mylis. She kept it for my inspection. On looking at it, it appeared to be a mixture of brown sugar and hogs lard, with a white powder imperfectly mixed in it. I tried some of it on live coals, and was sensible of the garlic smell of arsenic from it. I afterwards tried an experiment between two pieces of copper, and found it gave them a whitish colour. The remaining part I kept to be analyzed by some person more able to do so than myself. I found out afterwards that the mixture was laid at some other place at a distance for killing rats, and got to Valay by accident.—*Ibid.*

North Uist.

Case of Abscess of the Lungs, cured by Paracentesis Thoracis. By GEORGE HAWTHORN, M.D.

WILLIAM LONGMOOR of Clay, near Banbridge, county of Down, Ireland, pensioner, by trade a linen weaver, in the 34th year of his age, of a robust and full habit of body, rather given to intemperance.

On the second of November 1817, (in consequence of exposure to damp night air, in a state of intoxication, after being previously much heated,) was seized with an acute pneumonic inflammation, which increased in severity until the evening of the 6th, before I had an opportunity of seeing him; during which time, nothing had been used for his relief, but, as a favourite nostrum among the vulgar, a large quantity of ardent spirits had been given, as they said, with the view of putting

him into a sweat, which obviously had the effect of aggravating every symptom.

He complained of obtuse deep-seated pain in his left side, extending towards the sternum, great oppression, and difficulty of breathing, approaching to orthopnea, with cold shiverings at times. Face swelled and livid; very severe dry cough; delirium at times; pulse 120, soft and feeble; heat of skin very great, and much thirst. In fact, every concomitant symptom exhibited the most alarming appearance.

Notwithstanding the most active treatment, bloodletting to the extraordinary amount of 196 ounces in four days, and every other remedy from which any benefit was likely to accrue, the disease, with intermissions, went on for three weeks, when it terminated in a most extensive suppuration, as will appear from the following history.

He could now breathe only in the sitting posture, and rather leaning forwards; pulse 130, feeble and irregular. He complained of great weight and oppression in the side affected, with cold shiverings, profuse, cold, and clammy night sweats breaking out about his neck and shoulders, coldness of the extremities, great prostration of strength, incessant cough, and sense of suffocation; and, upon examination by applying the hand over the part, a distinct fluctuating undulation could be perceived.

From the severity of the preceding symptoms, and great oppression and sense of suffocation which the patient laboured under at the time, I had no doubt that a large quantity of matter was formed, and dreaded the usual fatal consequence of the rupture of the abscess.

And my fears were much increased by the result of an unfortunate case, which a short time before came under my observation, of a woman labouring under the same disease, in whom all the symptoms bore a striking similarity to the case I am now describing, and where, I in vain urged the propriety of having recourse to an operation as a last resource.

This case, therefore, indicating the same necessity, I explained to his friends his danger, the propriety of the operation, and the consequences which might result from neglecting it; but all my expostulations had no effect. However, he was soon partially relieved by an immense effusion of purulent matter into the bronchial cells, which was expectorated by coughing in great quantities, to the very extraordinary amount of 5 lb. or 6 lb. in the day, and of an intolerably fetid putrid smell and appearance. There also issued from his whole body a most offensive, putrid, cadaverous smell. During which

time, every means and remedy were used which were likely to contribute to his relief.

His feet and legs now began to swell, which was soon succeeded by an anasarcaous state of his whole body, combined with ascites. These affections were partly removed by the use of diuretics and appropriate remedies.

He remained in this deplorable state, every symptom becoming more aggravated, and the vital powers more and more exhausted, until the expiration of nine weeks from the suppuration being established.

The 28th of January 1818, being twelve weeks from the first attack, the purulent expectoration, which had continued, was now become immense; his feet and legs much swelled and cold; features ghastly; cold profuse night-sweats, particularly about his neck and shoulders, with colliquative diarrhœa; great prostration of strength; sense of weight and oppression about the breast, and more particularly in the side affected, with sense of suffocation. His breathing was now still more laborious and imperfect, from oppression and debility, and his articulation very difficult.

His impending fate now became obvious to every one, and I at length succeeded in obtaining permission to perform the operation of paracentesis thoracis.

Having, therefore, made the necessary preparations, I placed the patient in a proper posture, supported by one of his friends, being first satisfied as to the situation of the matter, and, without an assistant, commenced the operation by holding up the integuments in order to form a valve over the internal orifice, I began my first incision with a scalpel between the sixth and seventh rib, about six inches from the sternum, extending it about two and a half or three inches in length, cutting as near to the superior margin of the inferior rib as possible, avoiding the danger of wounding the artery, vein, or nerve running in the groove of the inferior margin of the rib above, carrying my first incision through the skin and cellular substance, dissecting the intercostal muscles cautiously. The pleura now being exposed, with the point of an abscess lancet, I divided it freely with the sac of the abscess, when, upon the instrument entering the abscess, the patient gave a great cough, and above half a pound of matter gushed up his throat, while his breath issued forth from his side with a great blast, dashing out about my hand, and round the room, matter of a most abominably fetid putrid smell and appearance. About 12 lb. of vitiated matter were discharged; and, contrary to what is supposed by some, instead of becoming faintish or sinking from

the sudden removal of the pressure, he became always stronger in proportion to the discharge, and exclaimed he was quite relieved, which, I believe, is generally the case.

The valve was now let down over the orifice, in order to exclude the access of the air. A soft, warm cataplasm was applied over the wound, and the patient turned to lie on the same side (to favour the exit of the matter) to which he had not before reclined from the first attack.

He now felt quite relieved, and rested well during the night ; and his friends assured me that above 10 lb. more were discharged during the night. Upon removing the cataplasm next day, about 4 lb. were discharged ; and every day, for eight or ten days, about 2 lb. were discharged ; after which, the discharge gradually decreased, until the wound healed up altogether, which was about six weeks from the operation. During this time, nothing was neglected which the critical nature of his case seemed to require. At every dressing, while the wound remained open, his breath issued forth from his side during expiration with a whistling noise, and with considerable force, sufficient to blow out a candle at some distance.

The expectoration, which had been so profuse previous to the operation, immediately disappeared on its being performed, and never returned ; unless occasionally when the orifice ceased to discharge for a day, or past the usual time ; but it quickly disappeared on the discharge being re-established ; proving the great utility of the operation, and indicating the free and extensive communication between the external orifice and the bronchia.

He now recovered health and strength rapidly ; so that, in three months, he was quite well, and declared he never enjoyed better health in his life, only that he was a little more easily fatigued by exercise. He then resumed his trade as a weaver, and has since enjoyed good health, perfectly free from all complaints.

I have thus given a very brief and cursory outline of the particulars of this very extraordinary case, which is a striking instance of the utility of active treatment, and the impropriety of resigning the unhappy sufferer to his fate, although in circumstances seemingly very unfavourable. It is also evident, that if the operation had been performed when first proposed, the case would have been much more favourable, and with much less risk of disappointment.

It affords, also, a strong presumption that it would be likely to succeed in many more cases than is generally supposed, providing it be performed in proper time, and in the proper

manner. The recovery of the patient in the case above described, after such an extensive ulceration and destruction of the substance of the lungs which must have taken place, must, indeed, by every one be acknowledged as very extraordinary, considering such a large mass of vitiated matter so long in contact with such irritable and important organs as the lungs; which likewise affords the strongest presumption, that, when this case succeeded in such very unfavourable circumstances, in one so far exhausted, so long labouring under such profuse colligative discharges, and all the destructive devastations of hectic fever, our hopes may be sanguine in those cases, where few or none of those untoward circumstances may have occurred.

We are reminded by all writers on inflammation, of the important necessity of evacuating, as early as possible, all collections of matter in the vicinity of large joints, blood-vessels, or important organs. Then, surely, of all the organs of the body, there are none of more importance than the lungs and thoracic viscera. Therefore, I think it is our duty, in every case where it is in any wise practicable, to have recourse to the operation.—*Ibid.*

Banbridge, County of Down, Ireland.

On the Departments and Periodical Actions of the Glands.

[BORDEU, *Recherches sur les Glandes*]

WE shall term the *department** of a gland all that part of the system which enters into a sort of action when the gland acts: when these organs dispose themselves for the exercise of their functions, it is certain that they agitate more or less the neighbouring parts.

There are some glands which, when in action, suspend other functions, so that we may say, that, in certain respects, the suppression of those functions is comprised in the *department* of the gland which suspends them.

We even find some glandular bodies which augment, when they take on a certain kind of action, the motion of the heart, and which give shocks, more or less regular, to the whole nervous system.

* We now call it the *sympathetic relations* of an organ; but the word sympathy was not used in medical language at the time of Borden.—*Edit. Lond. Med. and Phys. Journal.*

We shall endeavour to elucidate these truths, which have been only perceived in a general manner. It will be necessary to determine the department of each gland, to know which are those that may act at the same time with it, and which are *congeneras*; and to ascertain how long they are engaged in action. Let us see, if what we are about to adduce, will not throw some light on this matter.

The glands act to effect their excretion; there are periods when they are not in action; their action is, as it were, periodical:—these truths have been demonstrated in a former part of this dissertation.

Are not these periods marked and fixed? And what are the variations that may take place in them? This problem, and many others that might be proposed on this matter, are not easy of solution: we have not yet acquired the necessary materials. Let us see, however, if it is not possible to say something more determinate on the departments of the glands, and on their periodical actions.

An examination of what passes in the Liver.—Let us first speak of the gall-bladder; and, without stopping to consider its true position in all subjects, let us only examine what authors have said on the manner in which it evacuates its contents.

We find some who state that it is compressed by the stomach: the most modern authors render it subject to the action of the duodenum: but we do not fear to assert, that, if there were only these pretended causes for its evacuation, that this would never take place.

1°. The stomach does not touch it in hardly any subject; 2°, the duodenum touches it only in a few; 3°, every person may prove that compressing it in the dead body, and even with force, does not empty it: it must be very full for compression to produce a flow of bile from it; 4°, the colon constantly touches the gall bladder,—but will it be said that it is to compress it? It must only empty itself, then, when the colon is full: which is an absurd supposition. Let us conclude from these proofs, without entering into long discussions, that the gall-bladder must be emptied by some other power than that of the compression of the surrounding parts.* We must

* We should have observed on first adducing these extracts, for the convenience of our less well-informed readers, that the arguments in them are expressly directed against the doctrine of BOERHAAVE, whose sectaries at that time were the medical heroes of Europe; and, indeed, not less celebrated in almost every part of the civilized world. The emperor of China, on writing to their master, addressed his letter To Boerhaave, in Europe. BORDEU, in his Thesis, produced at the age of twenty-one, com-

not think that compression has nothing to do with it ; but it is necessary that the gall-bladder should itself enter into action, and make an effort which renders it as if it were full. It is like the urinary bladder, like the rectum, the stomach, and the intestines : these reservoirs empty themselves by their own powers, and by the effort of the parts in their vicinity.

The gall-bladder is, without doubt, irritated by the matters which are in the duodenum, and which cause an appropriate irritation of the biliary duct, and the nerves of these parts ; perhaps, indeed, the gall-bladder enters into action without being thus irritated.

The liver should certainly be regarded as one of the glands which we have termed active, and which have a particular motion for secretion and for excretion.

This glandular viscus is constantly agitated and irritated by the diaphragm ; it is perpetually rising and falling ; so it is probable it is always in some degree engaged in secretion : but is this secretion as continual as that of the saliva ?

There is some period in which the secretion is much augmented ; and this is apparently, under ordinary circumstances, when digestion is going on in the duodenum.

Habit, apparently, prevents our feeling the motions of the liver ; inspection of living animals does not teach us any thing positive ; we have, however, convincing proofs of such a mode of action of the liver : disease, and various preternatural states, furnish them.

Indeed, there are some persons, who, an hour or two after eating, become extremely yellow : they remark that this constantly happens during the period which they call the time of digestion, or when the aliment which has sojourned in the stomach passes into the duodenum.

Whence comes this bile which is thus shown in the blood ? Is it not evident that it re-flows from the liver, and that it is impelled by the action of this viscus : this action is too forcible, and the vibrations are ill directed. But, do not these periodical returns prove two things ? One, that the liver has, like all other *active* glands, a particular action for the discharge of the fluids which it separates, or for their separation ; and the other, that this action is renewed, or augmented, or comes on, precisely during the time of taking food.

Those who are subject to certain colics, which have a great relation to the liver, and which are often the consequences of

menced his attack on that doctrine, and displayed some of those conceptions that were the foundation for the revolution that has since ensued.
Edit. Lond. Med. and Phys. Journal.

stones contained in the gall-bladder, have they not paroxysms, or more severe attacks, of these colics during the process of digestion? Do they not feel constrictions, stiches, and drawing sensations, in the hypochondres?

We might also relate what takes place in melancholic patients, in whom it is easy to perceive that the stiches, tremulous sensations, and dull pains, of which they complain, in the right side, have their seat in the liver: let us, however, only speak of those who are subject to hæmorrhoids. When the flux of blood is about to happen, the patients feel painful stiches and sharp darting sensations, which commence towards the right hypochondre, and which proceed in a downward direction to the left side. Is it possible to doubt that the liver, and the parts connected with it, are not in action in these cases?

Lastly, those who suffer schirrous tumors and chronic abscesses in the liver, have pains, in a manner periodical, in the hypochondre. These pains are more or less fixed, and they are experienced more at one time than at another; and ordinarily they are increased during the process of digestion.

The patients in question are also subject to darting pains in the whole of the right side, about the neck and face, and to numbness of the arm and lower extremity of the same side: after these darting pains have continued for some time, swelling comes on in the right side, the face, the arm, the leg, the hypochondre, &c.

All these observations, which daily experience confirms, demonstrate, it appears to me, that the liver has a peculiar action, and that it exerts it especially during the time of digestion. They also show that there are parts dependent, in a manner, on the liver; since, when that organ is diseased, they experience the effects of it: these are in the department of the liver.

An examination of what passes in the Spleen.—Whatever may be the principal use of the spleen, we shall demonstrate that it has a peculiar action, and that it exerts it at marked periods; and, lastly, that it has a very extensive department.

Let us first make use of the remarks of M. DÜVERNOY and those of M. LIEUTAUD, which we have in part confirmed. The spleen is of a different colour, and different in size, in dogs, when they are opened whilst digestion is going on, and when it is completed: if the stomach be full, the spleen is *folded up*, white, and hard; on the contrary, it is more soft, more red, and larger, when the stomach is not full. These observations cannot be disputed.

We do not however believe, as it has been done, that the diminution in the bulk of the spleen arises from the compression made on it by the stomach; it appears, that there is no state in which the spleen is not harder than the stomach. Although there were not many reasons which we will not here detail, this remark alone is sufficient to prove that the spleen is never compressed by means of the stomach.

How do the changes we have mentioned arise then? The following observations will perhaps explain them. The stomach admits blood much more easily when it is full than when it is empty; the circulation is carried on better in this organ when it is distended than when it is empty: now, since the spleen and the stomach have arteries from one trunk, it follows, that, when the blood flows more readily into the stomach, the spleen will receive less of that fluid.

We must also add, that the spleen contracts itself by its own power, for the want of blood would not render it hard: it has its peculiar action; and this action, which diminishes the volume of this viscus, causes the blood to go in greater quantity to the stomach, to the pancreas, and apparently to the liver itself; and this precisely when secretion should be augmented in all these viscera.

The spleen may then be regarded as an organ, which, when it is full, diminishes the quantity of fluids in some other viscera; and which, when it contracts or empties itself, augments the quantity of those fluids. We might, in this sense, consider the spleen, in certain respects, as a sort of reservoir, which we have already remarked: we do not, however, mean to say, that this is the principal and the only use of it.

Whatever it may be, the action of the spleen shows itself still better in what we perceive in some diseases. Those who have tumors and suppurations in this viscus, experience in the left side similar disorders to those which are found in the right when the liver is morbidly affected,—as darting pains, flutterings, distentions, &c.

We have seen a man who had a schirrous tumor in the spleen, who ordinarily, towards the hours of eight or nine in the morning, had the left foot almost totally benumbed; and the cheek of the same side cold as marble, whilst the right was very hot.

We should never end, were we to treat of all the pains in the head, fluxions of the left eye, pains in the ear of the same side, cramps, and many other phenomena, observed on the left side of those who have disease of the spleen.

This, then, is another viscus, apparently glandular, that has its action and its department, and performs its functions after certain intervals.

This is not the place to examine whence these communications, or these relations of one part to another, arise ; and how the shocks and thrills extend from the affected viscus, as from a centre.

It is sufficient, that what we have advanced is founded on incontestible observations, and which those who regard patients with some attention will not deny.

Reflections on the Nature and Treatment of Cancer, supported by Practical Observations. By J. J. LASSERRE, of Domme, Doctor in Medicine of the Faculty of Paris.*

[From the London Medical and Physical Journal.]

THIS memoir contains some observations of remarkable interest to every medical practitioner, whatever general principles of pathology he may have adopted. Even those who consider that *cancer* is, in all cases, essentially a disease of a specific nature, or local morbid action modified by a peculiar diathesis of the system, will not think the cases here related unworthy of their serious attention. We shall therefore select two of these which are the most interesting, and such of the remarks of Dr. Lasserre as are expressly applicable to them; omitting his more general theoretical reflections, because we have already given our readers some ideas of them, on various occasions, in our extracts from the works of M. BROUSSAIS, of whose principles the author is a zealous partisan.

"A female peasant, of a dark complexion, robust habit, forty-seven years of age, married since her twenty-third year, and who had never been a mother, experienced, during eight months, great irregularities in the periods of the occurrence of the menstrual evacuations, which were always accompanied, too, by violent colics and severe pains about the loins. In the course of the month of May, 1817, she perceived a moveable tumour seated above the right nipple, about the size of a large plum. For twelve days she had suffered lancinating pains in the part, which induced her to come to consult me. This was in the ensuing June. The tumour was not painful to the touch; the nipple was redder and more sensible than that of the opposite side. I inquired whether she had ever

* *Réflexions sur la Nature et le Traitement du Cancer, avec des Observations à l'appui.* Par J. J. LASSERRE. D.M.P. à Domme (Dordogne.) *Journal Universel des Sciences Medicales*, tome xiv.

experienced any external injury to the part, which might have given rise to it, and if she had adopted the bad habit of confining her person tightly by her dress? To these questions she replied in the negative.

“Reduced in this case to regard the affection as consequent on the derangement of the functions of the uterus, and as independent of local mechanic action, I proposed the extirpation of the tumor by the knife.*

“Forced to combat an affection which menaced a rapid progress, from the violence which the pains had acquired for several days past, and the rapid increase of the size of the tumor, I advised the repeated application of leeches to the part itself, and, intermediately, the plaster *de Vigo cum mercurio* mingled with that of *cicuta*;† an issue in the right arm; half a drachm of mercurial ointment to be rubbed on the same member; bleeding from the arm every eighth day; the use, after intervals of four days, of thirty grains of the pills of *Bellost*; a severely restricted diet, carried so far as to excite a sensation of *sharp* hunger; and cessation from the use of wine.

“On the 20th of July, thirty-six days from the commencement of the treatment, this woman again visited me. The tumour had diminished to about the size of a small nut; the pains were so slight as to be scarcely sensible; and the nipple was neither redder nor at all more sensible than that of the other side. Menstruation had been totally wanting. The treatment having succeeded beyond my expectations, I ordered its continuance, and added to it the use of whey containing the acetate of potash. Leeches were employed only twice in the ensuing month, as well as the bleedings from the arm.

“The 20th of August, no appearance of menstruation; there did not remain the slightest vestige of the tumor; the pains had ceased for three weeks. The only thing this woman now experienced from her disease, was the emaciation resulting from the forced abstinence, to which she had submitted with a degree of resignation truly exemplary. I have since then frequently seen her: she has regained her health and flesh, and her ordinary gayety of disposition; not the slightest symptom of her disease has re-appeared. The breast in which the tumor was seated is, however, not so firm and plump as

* Should we, in symptomatic cancer, have recourse to the operation in the first instance?—*Note of the Editor of Journ. Univers. des Sciences Med.*

† “In employing this topic, I had no other object than that of alleviating the pain by means of the sympathy of the skin with the parts which it immediately covers.”

that of the other side. This woman still preserves the issue open, and wears the plaister on the breast, which she renews every month.

"I should by no means say that I have, on this occasion, cured a cancer of the breast; I am too well convinced that the disease was not a cancerous affection: but I believe I may state that it is highly probable that I have prevented the development of a disease of this nature. Almost all cancers have not a different origin; they are developed under the influence of identical circumstances. If it be demanded of what nature was this woman's disease, I reply, that it was chronic inflammation, depending on the influence of sympathy from the uterus; or, rather, from the cessation of the functions of that organ, and the transport to the breast of the sensibility which then abandoned it, perhaps too suddenly.—

—"What I have said respecting chronic engorgement of the glands of the breast, is applicable to disorganizative affections of the neck and body of the uterus. Let us reflect on the circumstances which evidently give rise to cancer of the uterus, and examine them in a physiological point of view, and then see if that malady is not obviously the consequence of prolonged irritation? I need only mention difficult labours, and a want of proper relation between the genital parts of the two sexes in the act of coition. Every physician knows that cancer of the uterus may occur as a consequence of these circumstances.

"This etiology is equally applicable to cancers of the stomach, the rectum, &c. In the greater number of these cases, we only find, if we trace the source of the evil, the slow progress of chronic inflammation, which leads to them as a result. Let it not be said that cancer is a malady *sui generis*, an *essential* malady, an *organic vice*. If all diseases had been regarded in this manner, medicine would have been always left in its infancy. The cultivation of pathological anatomy, the application of the laws of an enlightened physiology, the study of the language of the suffering organs, independently of the names by which diseases have been designated: such are the only means of making discoveries in medicine really useful to the welfare of patients and to the progress of science. It is to M. Broussais that we owe the first clear exposition of these principles, and the demonstration of the superiority of them by their application to the healing art.

"One case only of chronic engorgement, or, to speak the ordinary language, one case only of schirrus of the uterus, has occurred to me in the course of my practice. Without saying

any thing in prejudice of the propriety of the means I employed to combat it, I will here faithfully relate them.

"Mrs. T. forty-three years of age, of a dark complexion, prodigiously fat, and of an ardent disposition of mind, experienced for six months irregularities in menstruation. This lady was the mother of five children: the whole of her labours had been of the most easy and favourable description.

"In the course of the summer of 1817, Mrs. T. began to experience dull pains and a sensation of heat in the interior of the vagina. She complained of it to her husband, who made me acquainted with it, and who much aided my exertions to obtain a full account of the case, by the manner in which he urged her to disclose all the circumstances respecting it. She at length, with extreme difficulty, acknowledged that, for five months past, the approaches of her husband had been the cause of very severe pain. She experienced a sensation of weight in the hypochondres, thrilling pains about the loins and in the groins, and occasionally painful dartings in the lower part of the abdominal cavity, and in the interior of the genital organs. As she was alarmed at these circumstances, (from the recent death of one of her friends, who, after symptoms which she said were similar, had been afflicted with cancer of the uterus,) Mrs. T. permitted me to make an examination of the seat of the disease.

"I found the neck of the uterus hard, unequal, and painful on the slightest pressure: the body of this viscus appeared to be larger than ordinarily, although pressure immediately on it, or above the pubes, did not shew it to be possessed of unusual sensibility. The finger caused a sensation of burning pain in the vagina. The patient had never had any other flux from these parts than the menses and the lochiæ.

"I directed that six leeches should be applied to the vulva, and two days afterwards the same number to the groins, and so on alternately, until they were counter-ordered; a hip-bath daily, made with a strong decoction of poppy-heads; an enema morning and evening, of a slight decoction of the fresh leaves of belladonna; an issue in the left arm; and the most severe restriction in diet, with total abstinence from wine.

"After this treatment had been followed for fifteen days, the pains were much diminished. The patient endured the restriction from food with the greatest impatience; but, on my insisting on the necessity of this measure, she consented to submit to it. Fomentations with the decoction of belladonna were made every evening to the hypogastrium, in addition to the other measures.

“On the 16th of July, the patient had become considerably emaciated; the pains were much less intense. The enemas and fomentation to be discontinued. The leeches were applied only once during the rest of this month. The same severity of regimen. The food consisted solely of vegetables,—as carrots, the fruits of the season, and about four ounces of bread daily. Her drink was merely water and lemonade.

“The 12th of August, the patient suffers no pain, either in the loins, the abdominal cavity, or the groins. The neck of the uterus has regained almost its ordinary size; it is soft, equal, and not painful on pressure; the sensation of burning heat is no longer experienced in the vagina. Menstruation has not appeared since a month before the treatment. The hip-bath to be continued; four grains of extract of cicuta to be taken daily; the abstinence to be less severe.

“The 8th of September, the little tumefaction of the neck of the uterus last noticed has totally disappeared. The treatment was here omitted, and the patient gradually resumed her ordinary regimen. I thought it my duty to represent to her husband the necessity of not again using cohabitation. Since this time no accident has appeared; and I think I may assert that the affected is cured.—

—“In all the cases I have related, it has been seen that I have insisted on abstinence from food to such an extent as to produce *sharp* hunger. The want of alimentation is one of the most favourable conditions for the cure of affections, in which it is desirable to effect the re-entry into the circulation of the product of morbid accumulation of nutritive matter, in consequence of inflammation either acute or chronic.”

The author concludes with observing, that he has found mercury very efficacious in fulfilling the latter intentions, when employed in the mode, and with the precautions, pointed out by physiology.

Hints of a new Idea of the Nature of the Cellular Tissue.

By G. M. DE FELICI, M.D. Public Demonstrator and Conservator of the Collection in the Museum for Pathology and Comparative Anatomy, in the University of Padua. 8vo. Padua, 1817.*

[From the London Medical and Physical Journal.]

ALTHOUGH, as we have already observed, it was our intention to give a generally comprehensive view of the pathological doctrine at present prevalent in Italy,† before we particularly noticed treatises on distinct subjects; yet we have been induced to deviate from that intention on the present occasion, from the observations contained in this little pamphlet being almost the only ones of importance relating to the structure of the elementary tissues, that have been advanced since the time of BICHAT; and from the consideration, that they may be useful to the reader in his reflections on the work of Dr. BARON. We shall present our readers with the substance of it, without adducing any particular observations of our own, excepting some references to authors who have treated on, or produced illustrations of, the same subject.

The cellular texture enters into the formation of every other part of the human body; and of many of them it constitutes the greater proportion of their structure. It was long since considered by some physiologists as a net-work of vessels, more or less pervious to the fluids; but this opinion has not been generally adopted. HALLER regarded it in a different manner: he says, "*Vasa, quæ tunicas pingunt, accessio sunt cellulosaë telæ, neque constituunt naturam membranaë, sed membranaë per cellulosaë telam innataë superadduntur.—Cellulosa fabrica fibris fit laminisque solidis omnibus, neque cavis, neque vasculosis, etsi vasculis adcedentibus pingatur.*"‡ A similar notion was entertained respecting it by

* *Cenni di una Nuova Idea sulla Natura del Tessuto Cellulare.* Del Dottore G. M. DE FELICI, Pubblica Rêpertitore è Custode de' Gabmetti Patologico e di Notomia Comparata, nella I. R. Università di Pavia. 8vo. Pavia: Bizzoni. MDCCCXVII.

† We are waiting for some important works that have appeared since our observations were made and arranged; and this will occasion the postponement of our Essays on this subject to the ensuing volume of this Journal.

‡ *Primæ Linæ Physiol. c. i.*

BOHN,* BORDEU,† and RICHAT,‡ the principal of the original authors on this subject who have written since Haller. But Dr. Felici observes, the very accurate observations of some great anatomists seem to show the correctness of the first-mentioned opinion; and he adduces some peculiar to himself, that contribute to establish its propriety.

“RUSCH,” the author says, “had already observed, that the interior parenchymatous structure of the spleen was nothing else than an aggregate of vessels; and he showed some specimens of that organ, injected according to his own mode, in which nothing could be seen but an admirable tissue of vessels, ramified in a prodigious manner; as SABATIER.§ has also stated. HEISTER injected, by the veins of the penis, the glans and corpora cavernosa, which were thus rendered in appearance a plexus of venous vessels.|| Similar injections made by Prof. REZIA are preserved in the anatomical cabinet in the university of Padua. But the conclusion I shall hereafter advance, is also founded on some other observations made by Prof. CAV. MORESCHI.

“The corpora cavernosa of the penis, from the most careful and repeated observations and injections made in the human subjects, and various animals, especially in the horse of Prof. PANIZZA, appear to be nothing more than a mass of vessels, forming layers, anastomosing with each other, and which give to those parts the spongy, alveolar, or cellular, appearance, those bodies present. The other cavernous structures, that of the clitoris as well as that of the papillæ of the breasts, are obviously of the same nature. The cavernous tissue which surrounds the vagina, *plexus vaginam pene totam ambiens*, is merely formed by a multitude of vessels, transmitted from the adjacent parts, communicating with each other by frequent and short anastomoses. The cavities seen within the texture of the uterus communicating together, which much resemble those of the spleen and the corpora cavernosa of the penis, and which are enlarged and distended during the time of menstruation and pregnancy, are also shown to be only vessels passing into that organ in a serpentine direction. The truth

* *De Continuationibus Membranorum.* Amstelodamiæ, 1763.

† *Recherches sur le Tissu Muqueux, ou l'Organe Cellulaire.* Paris, 1767.

‡ *Anatomie générale. Systeme Cellulaire.* Art. I. § 1.

§ *Traité complet. d'Anatomie, tome iii. de la Rate.*

|| *Compendium Anat.* tab. v. fig. 22, 25.

of these observations is clearly demonstrated by the beautiful preparations in the Anatomical Museum in our University."

May we not then consider, says Dr. Felici, that the cellular tissue is formed in the same manner as the spongy texture of the spleen, and the corpora cavernosa of the penis? Are not, making an abstraction with respect to size, the net works, the cellules, and the alveoli, the same in one as in the other? And why should we then regard their formation in a different manner? And are there not many circumstances which show the correctness of the opinion above advanced?

"If we observe the back of the hand," the author continues, "we see a tissue constituted solely of an extremely fine vascular net-work. All the arteries which are distributed in the membranes have also the same reticular figure. '*Fines arteriarum,*' says Haller, '*cylindrici, aut cylindricis proximi, ramulos producant in eadem longitudine crebriores, plerumque in rete dispositos, ut quilibet ramus minoribus surculis cum utroque vicinorum anastomoses faciat. Ita in omnibus membranis reperitur.*' And, speaking of the veins, he adds, '*Rami majores venarum magis reticulati sunt, ac frequentioribus anastomosibus, nec inter parva, sed inter maxima vasa, inter vicinas, dextras et sinistras, superiores et inferiores venas, ubique adparentibus coeunt.—In minoribus ramis, retibusque membranosis, viscerumque interiori fabrica arteriarum, venarumque plerumque conjunctæ ambulant. Minus fere flexuosæ sunt.*'*

Many beautiful and fine injected preparations in the Museum at the University of Padua, some visible to the naked eye, others only by the aid of the microscope, as well as others furnished by Professor SCARPA, show in the most evident manner the cellular tissue of the face, the palms of the hands, the soles of the feet, the villi of the intestines, &c. to be nothing else than a congeries of vessels. "How surprising are the injections with mercury of the lacteals of the small intestines of the turtle, in the specimen contained in our Museum. In this preparation, presented by Professor Scarpa, the lacteal vessels are so numerous, that it might be said the intestines of this animal are merely a congeries of those vessels; the metal shining through every discernible point of their surface. These injections would frequently succeed if the necessity of injecting the lymphatics by the branches, leaving the trunks to avoid the opposition of the valves, did not present a forcible obstacle.

* *Primæ Linæe Physiologiae*, c. ii. §§ 33, 48.

"The injections of Ruisch prove the same thing; and yet these injections, however happily they may have succeeded, never fill the whole of the most minute vessels."

The beautiful observations of Professor Scarpa, too, on the nature and generation of the bones, prove that they are not formed by lamellæ, or fibres, as formerly believed, but by a reticulated, tomentous, cellular tissue:* these, with the injections of the bones in general made by the same physiologist,† seem to show that the basis of the osseous structure is nothing but an aggregate of vessels.

These notions respecting the formation of the cellular tissue are powerfully supported by the phenomena attending the formation of new parts in the healing of wounds, the union of fractures of the bones, the generation of false membranes and cysts, which are apparently wholly formed by fine vessels shooting into the effused lymph. These are circumstances that at least show the subject to be worthy of attention, in the manner the author has here pointed out. Dr. Felici considers that it is from an alteration in the state of these vessels, that thin, diaphanous, and pellucid membranes become dense and opaque in inflammation. "Thus," he says, "the fine and transparent lamina of the conjunctiva, by dilatation, varicosity, elongation, and obstruction, of the veins, become thick and opaque, pulpy, flocculent, and of a reddish hue; so that, on a first view, it would appear that a new membrane was generated on the cornea."

Whenever the cornea is affected with cloudy specks, a congeries of varicose venous vessels will be found on the white part of the eye, corresponding to those specks, more elevated and convoluted than the other sanguineous vessels of the same order; and, if the cornea be clouded in more than one point of its circumference, there will be seen so many distinct plexuses of varicose venous vessels distributed on the eye, exactly corresponding with them. It appears, on a first view, that each of those venous congeries, so distinct from, and prominent above, all the rest, have forced a passage for the blood through the boundaries of the sclerotica to the cornea. "I have an eye preserved," says Professor Scarpa, "taken from the body of a man affected with chronic varicose ophthalmia, accompanied with cloudiness of the cornea, who died of inflammation in the chest. Having injected the head by the arteries

* *De Penitiori Ossium Structura Commentarius*. 4to. Lipsiæ, 1799.

† See *Index Rerum Musæi Anatomici Ticinienis Antonii Scarpa*.

and by the veins, I found that the wax, with which the veins of the conjunctiva were well filled, had found a free passage, as well in the more elevated congeries of those veins, as in the more minute branches of the same congeries running in a serpentine direction on the surface of the cornea, in the precise spot where the cloudiness had existed; whilst, in all the rest of the circumference of the cornea, the injected wax was arrested by having found, in the confines of the cornea and the sclerotica, an insuperable obstacle. And it is wonderful to see in this eye, by the aid of the lens, the extremely fine net-work formed by the numerous venous branches in the limits between the cornea and the sclerotica, where they beautifully anastomise together in a thousand ways all around it, without any of them, excepting in the spot corresponding to the situation of the opacity of the cornea, passing the boundaries formed by strong adhesion, which the fine lamina of the conjunctiva there receives. The *pterygium* is originally produced by an increased dilatation of minute venous vessels passing over a particular part of the surface of the cornea; to this is then added a greater thickness than natural, and an opacity of the fine lamina of the conjunctiva which covers the cornea, on which those vessels are spread. The facility and promptness of the cure in these cases, by excision of the congeries of vessels on the conjunctiva, and a concentric incision at the margin of the cornea, by which this regains its original pellucidity in the short space of twenty hours, is a proof that this disease is kept up more by a varicose and elongated state of those vessels, still pervious, than by an effusion of serum or coagulable lymph in the delicate lamina of the conjunctiva, which is spread over the external surface of the cornea.”*

On this principle,—that is, from the generation of new vessels, or from the elongation of the extremities of those of the inflamed part,—the author observes, it is that the generation of new membranes in inflammation depends; and he refers to preparations in the Museum of the University of Padua, in which membranes of that kind, formed in peripneumonia, carditis, pericarditis, and abdominal inflammation, were filled with mercury by injection. Preparations illustrating this vascular union in the morbid adhesions occurring in inflammation, have been presented to it by Scarpa, Borda, and Joseph Frank. The following case contributes to the support of these opinions.

* See the new edition of the *Saggio di Osservazioni e di Esperienze sulle Principali Malattie degli Occhi*, di ANTONIO SCARPA; capi 7, 8, 11.

On dissecting a body, accompanied by Professor Panizza, Dr. Felici says that he found a large, isolated, cystoid, tumor, in the left hemisphere of the brain, which contained about eight ounces of coagulable lymph mingled with pus of yellowish-green colour. The lateral ventricle, which was adjacent to it, was driven considerably out of its natural situation, in a downward and backward direction. The cyst which contained the fluid above mentioned, could not, apparently, have been formed by the membranes of the brain. On examining it particularly, Professor Panizza found it to be composed of two laminæ, extremely vascular: the external one adhered to the cerebral mass by ramifications of vessels; the other presented a granulated appearance on its internal surface, was of a red colour, and looked indeed as if it had been injected.

"These facts (the author continues) will explain the nature of the tubercles found in the skin, which are merely a network of vessels, as is demonstrated by injections, with the exception of some nervous fibrili; which, though we cannot trace them, we know to exist from their effects *

"We may thus explain the generation of new parts in wounds, by the elongation of the divided extremities of vessels into granulations, which restore the soft parts to their original form: the same means also produce the union of bones.

"We may thus explain the obstinacy of ophthalmia, the opacity and condensation of the conjunctiva in chronic varicose ophthalmia, in cloudy specks on the cornea, and in pterygium, by the excessive distention suffered by the vessels of the conjunctiva during the inflammatory state; by the varicosity and elongation of the vessels, principally the venous; and, consequently, by the condensation of the conjunctiva produced by the inflammatory action.

"We may thus explain the generation of new membranes, the morbid adhesions between them and other parts, and the origin of cystoid tumors within the substance of the brain.

"We may thus also account for the *vasa vasorum*, which enter into the formation of the cellular tissue of the vessels themselves, of which HALLER observed, '*Arterias arteriæ habent in extremo imprimis celluloso textu, a vicinis undique arteriosis trunculis natas, multas, remosas, reticulatas, omnes exiguas, in fetu etiam absque injectione plurimas.*'†

"The same facts will enable us also to comprehend more satisfactorily the sudden redness that tinges the face in the act

* CALDANI *Institut. Physiol.* c. 16. §§ 224. 225. 227. FATTORI, *Guida allo Studio dell' Anatomia Umana*, §§ 367, 368.

† *Prim. Lin. Phys.* c. ii. § 32.

of blushing, as well as the paleness of the skin and the cutis anserinis from terror, or from cold; by the influence of the nervous action on the contractile power of the arteries, and the varieties in the transmission of the blood by them which thence arise.

“We may thus explain the growth, the preservation, and the death, of animals, according as these vessels are elongated, and give way to the impulse of the blood, or by degrees successively become closed and obliterated; and, lastly, according as their excitability shall become destroyed by the influence of stimulants.

“Lastly, we may thus more easily explain the secretions over the whole external and internal surfaces, and in the cavities of the body, and their re-absorption; and the readiness with which adipose matter is deposited, as Haller observed, *‘Via ab arteriis ita proxima et libera est in cellulas adiposas, ut majuscula ostia eo hiare necesse sit, quæ dimittant mercurium, aerem, aquam, gelatinam, oleum, semper etiam in vivo animale pigrum. Non per longos aliquos propriæ fabricæ ductus excernitur, sed per totam arteriæ longitudinem undique exsudat, ut nulla pars circumpositæ cellulossæ telæ absque madore sit, quando arteria aqua repletur. Adeps calidas in arterias pulsus easdem vias facillime legit. Celeriter congeritur, argumento cito renascentis post aculos morbos obesitatis.’**

“Considering, then,” the author concludes, “the whole of this extensive tissue, not as a texture of no importance, except as a basis for sustaining the figure and firmness of the body, but as an aggregate of vessels, the immediate organ of the secretions, of nutrition, of absorption, &c.; and viewing it entering into the formation of, and furnishing life to, every part of the system; we shall form a more noble, and probably more correct, idea of its uses in the animal economy.”

These notions, Dr. Felici is careful to observe, are not advanced in a confident manner, but with the intention of exciting the attention of anatomists to some new researches on the subject. The observations he has adduced, seem to be sufficiently precise and important to lead to such an investigation; and the views they disclose of the structure of the body generally, certainly must facilitate our reasonings on what we witness of its functions.

* *Prim. Lineæ Phys. c i. § 19.*

An Inquiry illustrating the Nature of tuberculated Accretions of the serous Membranes; and the Origin of Tubercles and Tumours in different Textures of the Body; with Engravings. By JOHN BARON, M.D. Physician to the General Infirmary at Gloucester. One Volume, Octavo, 308 pages, and Five Plates. London, 1819.

[From the London Medico-Chirurgical Journal.]

A NOTED teacher in the British Metropolis is accustomed to observe to his pupils, that medical men, of the present day, are too apt to turn old doctrines and hypotheses upside down, give them new names, and then come out with great discoveries. We have also heard it said lately, that the same remark is applicable to certain diseases themselves, which, on being more accurately examined by modern pathologists, have acquired new designations, and been considered additions to the long and melancholy catalogue of human infirmities. But for our own parts, we are by no means so fastidious on these points, being quite of Dr. Baron's way of thinking—namely, that “successive speculations on any subject imply, for the most part, successive approximations to truth, as no false opinion can be destroyed but by the accession of information, whereby its falsity is evinced. The theories, therefore, which an improved philosophy sanctions are the excitements to further inquiry; the bonds which hold together the disjointed elements of knowledge; not impeding the march of truth, but preparing the way for her ultimate triumph.” Speculations, however, become pernicious when they are founded on the mere conjectures of “daring spirits,” instead of facts and accurate observations. We are hardly yet freed from the spell of a late presumptuous and speculating genius, whose splendid illusions dazzled the mental optics of all Europe, and caused more havoc among the human race than the scourge of war itself.

We agree with our author, that the post mortem appearances, in diseased bodies, have been much more minutely and faithfully registered, than the symptoms which marked the successive changes of structure during life. No man can peruse Bonetus and Lientaud, without feeling the force of this remark; and even Morgagni, the accurate and honest Morgagni, gives us but very lame and imperfect histories of most of those cases, whose dissections are recorded in his valuable but neglected work.

It has been the object of our author to connect the symptoms with the functional and organic changes induced by disease; and for this purpose he has compared the experience of his predecessors with his own observations. What he at first thought an affection peculiar to membranes of the serous class, and explicable by the commonly received physiological and pathological doctrines, he now finds to be connected with the whole tribe of cachectic diseases, and various other disorganizations in different textures of the body.

The work is divided into two parts; the first, on the peritonæum; the second, on the pleura.

1. *History—Cases—Dissections.* Acute or purely inflammatory affections of the serous membranes have been well described; but the chronic changes of structure are very obscure, and have not hitherto been accurately traced. The disease under consideration is almost uniformly fatal; nor is it, Dr. Baron thinks, of rare occurrence. He has seen it in persons of all ages; though more in females than males. It comes on, in general, with tenderness and distention of the abdomen, accompanied with nausea and vomiting. The bowels, for the most part, are costive, both before and after the attack; but they are frequently relaxed. In the progress of the disorder the bowels become more and more irregular in their action. The tenderness and swelling increase; the appetite fails; the features sharpen and contract; the countenance becomes pale or sallow; the lips parched and skinny; the tongue sometimes of a bright colour, as in diabetes; at others, covered with a thick whitish mucus. The flesh and strength decay more rapidly than in any other disease; the skin, except towards the last stage, is commonly dry and scaly; the urine scanty, and frequently turbid; cough, if not from the beginning, is now apt to occur, if the disease spreads from the abdominal to the thoracic viscera.

“The feet sometimes swell towards the conclusion of the disease, but I have often seen the swelling confined to one leg and thigh. At this period, if the examination of the abdomen be made with due care, it will be found to communicate to the touch the feeling occasioned by a solid tumour; the integuments and muscles not rolling upon the contained parts as in a state of health. But in some cases, where effusion is conjoined with the original and more important disease, a sense of fluctuation may be discovered.

“Very frequently the patients complain of a distressing feeling of a “*broiling heat*” at the stomach, the discharge of a

tough, ropy, phlegm from the mouth, constant nausea, with violent retching and vomiting; and in two cases, the matter brought up during several days before death was stercoraceous." p. 20.

Although the appetite fails, the thirst is insatiable in the progress of the disease, even when the fluid swallowed occasions great distress. When sustenance is taken it is either speedily rejected, or causes indescribable uneasiness. The patient rolls about in all directions, seeking, in vain, for some point where he may repose. Every action of the stomach and intestines comes to be performed with great pain. The passage of flatus upwards or downwards, the movements which take place previous to the evacuation of the bowels, all give rise to much suffering.

"At times the pain is sharp and transient, at others, it is heavy and obtuse. But a sense of weight is seldom absent; and it is more felt after vomiting or purging than before. One patient (an infant) in allusion to this symptom, used to put his hand on the abdomen, and exclaim "Oh! so heavy!" Another said that his bowels felt as if they were "tied up in a napkin." At another time he said—"they seemed to be in a mass;" and at a third, he declared that if he had "a shot attached to every convulsion of his intestines he could not suffer more than he did." p. 22.

The above expressions were used by a medical man, as will be seen hereafter. The *post mortem* appearances illustrate the symptoms during life. The stomach and intestines cannot perform their functions, and the necessary aliment acts as a foreign body, occasioning dreadful distress. The source of external supply being thus cut off, the system feeds upon itself, as long as matter sufficient can be taken up by the absorbents to keep the vital functions in action. The change of structure is universal accretion of the peritonæum, binding all the contained and containing parts of the abdomen into one confused mass. The membrane becomes much thickened; loses its smooth and shining appearance, and is studded throughout with innumerable tubercles of various sizes. These are sometimes single, sometimes in clusters, pervading also the mesentery and omentum, while the lymphatic glands are frequently found enlarged and diseased.

CASE I. The first patient which our author met with, labouring under this disease, was a girl 17 years old, who when admitted into the Infirmary, was affected with a hard, tense swelling of the whole abdomen, painful on pressure, with sharp, pallid, anxious countenance; weak emaciated frame; cough, and copious expectoration; tongue of a bright red colour;

thirst urgent; pulse quick and feeble; appetite bad; bowels loose. The complaint was said to be of only four weeks duration. Squills and calomel twice a-day, with aloes and iron seemed, at first, to effect a slight reduction of the abdominal swelling; but the emaciation went on; the debility increased; the feet swelled; there were nocturnal perspirations; constant nausea and vomiting, with dreadful anxiety and restlessness, till death terminated her sufferings in less than three months.

Dissection. The whole abdominal viscera were adherent, and appeared, *en masse*. They could not be distinguished till the thickened layers of the peritonæum were torn from their adhesions. The intestines could not possibly be unfolded or traced. The alimentary tube itself had undergone a remarkable change. It was found deprived of its healthy texture; had lost its tenacity, and appeared like a transparent membrane which had been macerated in water. It tore on the slightest violence being applied to it. The mesentery and glands were diseased; the liver enlarged, and had lost its natural texture. A lumbricus was discovered in one of the biliary ducts, measuring full six inches in length, and alive at the time of examination. In the pleura some changes analogous to those in the peritonæum. Universal adhesion on the left side; diaphragm studded with small granulated masses; in the left lobe of the lungs tubercles in a state of suppuration.

We shall pass over several cases bearing a great similitude to that just related, in order to present some particulars of the following.

CASE II. W. F. Shrapnell, Esq. surgeon, after serving some arduous campaigns in Ireland, as a military surgeon, in 1816, and suffering from dysentery, became debilitated, and affected with sick head-ache, a malady to which he had been long subject. In January 1817, he first consulted Dr. Baron by letter. He then complained chiefly of pain in the right hypochondrium, diverging to the scrobiculus cordis and to the spine; some tenderness on pressure of the left lobe of the liver. He pursued a slight mercurial course for some weeks, without benefit, when it was dropped. He now very imprudently put his constitution to the test, by walking twenty-four miles in one day. He was taken up by Dr. Jenner towards the close of this journey; but the motion of the carriage gave him pain; chiefly about the right hypochondrium. He could find no easy posture. From this time his complaints increased rapidly. He felt as though his internal organs were compressed with a bandage.

On the 15th of May, Dr. Baron first saw the patient, who had now a sharp pain, increased by pressure, in the right side;

the belly enlarged and tender ; there was great languor and distress, with a peculiarly anxious countenance ; sense of weight in the abdomen ; irregularity of bowels ; inappetency ; urgent thirst ; much uneasiness after swallowing any thing ; pulse nearly natural. He had been bled several times from the arm, and the abdomen leeches repeatedly. The blood was inflamed, and relief followed each bleeding. It was determined to carry the general and local bleeding still farther.— During the next four days he was bled from the arm and leeches three or four times ; always with temporary relief : but still the disease did not seem to yield. The general swelling of the abdomen increased. Pressure on every point of the surface conveyed the idea of a solid mass ; the bowels were kept sufficiently open, but the stools were passed with difficulty.

After the depleting system had been carried as far as prudence would permit, he was occasionally purged with calomel and colocynth, while it was attempted to mitigate his sufferings by the anodyne extracts. The warm bath ; mercurial frictions over the abdomen ; artificial Cheltenham waters, &c. were tried, but only gave momentary relief. At length a sharp ridge could be felt in the course of the arch of the colon, under which the fingers could be pushed ; and soon afterwards there appeared decisive proofs that a fluid was effused into the abdomen. In two days from this time, viz. on the 6th of June, paracentesis abdominis was performed by Mr. Fry, and great relief was experienced during the flow from the trochar. The ridge before felt, now projected an irregular tumour. Although two gallons of yellow serum were withdrawn, all the uneasy feelings soon returned ; particularly the sense of weight ; and the pain and tenderness of the abdomen.

“Two days after the tapping, I find, that the pain which increased after the operation, had continued ever since, and at times that it was “*excruciating*.” He compares his suffering to the scraping with wire combs. The evacuations are more jelly-like. The pain, when the intestines are acting, is at times quite intolerable, and makes him cry out. The pulse becomes quicker, and skin is dry. The burning heat at the stomach, the irregularity of the bowels, the vomiting, and the distress after eating any thing, are quite as troublesome as ever.”

He was again tapped, but death put a period to his sufferings on the 21st of June.

Dissection. Three pints of dark coloured fluid in the abdomen ; the intestines appeared at once, but no omentum was visible ; they were redder than usual ; adhered together ; and the thickened tuberculated state of the peritonæal coat was

every where seen. The peritonæum lining the abdomen, shewed the diseased structure in the most perfect form. In some places the tubercles were distinct, and well defined, having patches of turgid vessels between them; in others, the tubercles having coalesced; gave to the surface a rough appearance, with protuberances of various sizes diffused over it. On searching, the omentum was found converted into a large irregular shaped tuberculated mass, occupying part of the epigastrium and left hypochondrium, bearing some resemblance to a diseased spleen. Around it the peritonæal coat of the stomach and intestines was much thickened, with great agglutination of the contiguous parts. The great curvature of the stomach was studded with tubercles; part of the arch of the colon was embedded in the diseased omental mass, which, when cut into, exhibited a firm, cheesy sort of texture; some portions shewing distinct circular tubera, corresponding with the inequalities on the outer surface. Both the mesentery and mesocolon were very much diseased, having a dense leathery appearance, and being studded with tubercles. All the glands were enlarged; the peritonæum lining the diaphragm was nearly half an inch in thickness. The liver was of a loose texture, and of a copper colour; the spleen, the kidneys, and the pancreas were natural. The thoracic viscera were sound.

In addition to his own experience, Dr. Baron has searched the writings of many authors, and has adduced various instances bearing a close analogy to the disease under consideration. In our own practice we have met with some cases of this kind, and we have recorded a short account of a dissection of one, in the 3d volume of the *Medico-Chirurgical Journal*, page 167, Monthly Series. The following short Extract will convey some idea of the appearances.

“On laying back the parietes of the abdomen, a bag appeared adhering firmly to the liver, spleen and diaphragm, and reaching down to the pubes. It was adherent on the sides and back; but, on rising it at the bottom, the rectum was seen descending from it into the pelvis. All within it felt a semi-solid mass. It was cut into, when the various convolutions of the intestines were found winding through a mass of mesenteric disease. Some of the mesenteric glands were as large as nutmegs. *The intestines, in every part of their tract, were fixed in this diseased structure, and could not possibly have had any peristaltic motion. They maintained their place, and even their calibre, when the morbid mass was cut through in all directions. The liver was studded throughout with tubercles.*”
Med. Chir. Journal for January 1817.

The above was in a child three years of age, who had been ill for several months, and the disease considered as *dropsy*. We did not see the patient alive, and were only requested to ascertain the cause of death by the parents.

In the second Chapter, Dr. Baron endeavours to trace the connexion between tubercies and hydatids, and to prove that the *former* are conversions or more advanced stages of the *latter*. In this we think that our author has been more successful, than in the attempt to ascribe the formation of the above-mentioned bodies to the absorbent instead of the sanguiferous vessels. We do not indeed say, that it is simply an *inflammatory* action of the vessels that can produce these morbid growths; but the said vessels may have many other morbid actions than those observed in the process of inflammation.—At all events, we believe that the vascular, lymphatic, and nervous systems of parts are so intimately blended in structure and function, that few morbid actions or states are *exclusively* seated in one or other of them.

Ratio Symptomatum. The connexion between symptoms and altered texture, in the disease under consideration, is more satisfactorily traced than in most other disorders, especially when the abdomen is the seat of the complaint. A glance at the functions of the alimentary canal will explain the symptoms which arise from this source, when the very fountain of nutrition is choaked up. In the thorax or other parts the symptoms are less decided, and likewise less alarming.

Although our author has adduced strong reasons for believing that the tuberculated affections of the serous membranes do not proceed from *inflammation*, and that the disease may exist without the symptoms which point out that state; yet it is certain, that inflammation may be conjoined with it, and that it often attends it, in some stage or other of its progress.

“But when this combination takes place, the remedies which are generally successful in removing either acute or chronic inflammation, are of little avail; for even should the inflammatory symptoms be subdued, the other affection would, probably slowly, but certainly, advance to a fatal termination.” p. 130.

Dr. Baron suggests, as a branch of his doctrine, that scrofula, and more especially tubercular phthisis, owe their origin to the same hydatid formation as the disease under consideration. When it attacks the membranes of the abdomen, its course is more rapidly fatal than when it occurs either in the pleura or lungs, and that for obvious reasons.

The disordered digestion and the irregular state of the bowels, with the weight and uneasiness about the abdomen, are gene-

rally to be met with at the onset, but are too often overlooked, till tumefaction, tenderness, vomiting, and all the other characteristic signs have taken place. Then too, the pyrexial symptoms become most manifest, probably depending on the supervention of inflammation. When this happens, there is an *increase* of the abdominal tenderness; heat of skin; thirst; parched tongue, &c. In some cases, effusion; in some, simple adhesion; and in others ulceration may be the result.

Although the tubercular affection often spreads along the serous membranes of the *abdomen*, without touching the parenchymatous structure of the viscera, yet it is not so in the thorax, for we seldom see the tubercles or accretions in the pleura, without detecting the *former* also in the lungs themselves.

Dr. Baron draws our attention to the resemblance between the state of the tongue of persons labouring under the tuberculous disease of the peritonæum, and those affected with diabetes. But there is more analogy than this.

“The external characters of the respective complaint are very much alike, and a diseased condition of the lungs is very common to both. The one disease seems to proceed to a fatal termination, by an imperfect assimilation, and the excretion of what ought to go to nourish the body; in the other, absorption and assimilation are nearly stopped; and it is not difficult to see how these different causes produce nearly similar results.” P. 136.

The swelling of the extremities is not a constant symptom, and it is sometimes confined to one side, which is satisfactorily accounted for, either by the effect of pressure, or by the extension of the disease to the lymphatics of the limb affected.

Diagnosis. This our author thinks is not difficult, after the disease has actually taken place. Dr. Baron here presents us with a short recapitulatory view of the prominent features of the complaint, which may enable us to contrast them with those for which they might be mistaken.

“There is, in the outward appearance of persons labouring under this complaint, an expression of distress and wretchedness which is scarcely to be described. The incessant feeling of weight and uneasiness about organs whose functions are necessary to life, is sometimes changed for a state of acute pain. The former sensation extracted, from an infant, moans of the most piteous nature;—another patient declared it to be intolerable, begging for relief, and saying that he felt as if he were about to be squeezed to death. All patients do not suf-

fer so much from this symptom ; but I have seen none who did not complain of it more or less."

With ascites it is most likely to be confounded, because fluid may be effused, and fluctuation felt. The evacuation gives of course, but a momentary relief. When there is no effusion, and the accretion of the viscera is complete, there is no difficulty in ascertaining the complaint. The belly is generally protuberant, hard, and unyielding, communicating the sensation which grasping a solid tumour would give. The great characteristic symptoms, however, arise from the extension of the disease to the alimentary canal and mesentery, for then the functions of digestion and assimilation, together with the peristaltic motion of the intestines, become interfered with, and the alarming characters of the disease are developed. There are other tumefactions of the abdomen, arising from enlargement of particular viscera, as of the liver, uterus, and ovaria, which may be mistaken for the complaint in question ; but the specific symptoms which appertain to these particular disorganizations, will always enable an attentive practitioner to discriminate.

In respect to *Prognosis*, it is almost invariably unfavourable. Possibly, in its earliest stages, its progress may be checked. Some patients live longer than others ; but, in general, its duration seems to be determined by the time required to bring it to that state wherein absorption from the alimentary canal is obliterated, or nearly so. After that period, the patient lives as long as the body can feed upon itself.

Treatment. When the disease is established, the most powerful resources of our art become unavailing, and we are forced to see our patients pining in wretchedness, without being able to afford them even temporary relief.

We are unacquainted with the means of removing the altered structure in *this* disease. Greater disorganizations may be got rid of, by the powers of the body, in other situations ; but this cannot be expected when the digestive organs, through which our agents act, form the seat of the malady.

Local and general bleeding with blisters, gave but very transient relief ; no more than arose from the temporary suspension of inflammatory pains. Without free evacuations from the bowels, the distress becomes insupportable. At the same time, the nausea and vomiting render it extremely inconvenient and distressing to exhibit purgative medicines. Potassa and soda will sometimes mitigate the gastric irritability ; at other times the mineral acids ; and the gastrodynia has been occasionally relieved by the oxyde of bismuth. Mercurial

purgatives often do good, but Dr. Baron thinks that they do not afford any relief beyond what proceeds from their evacuant properties. On the other hand, the constitutional effects of mercury are injurious. Anodynes Dr. Baron has employed, in all shapes, but with very little relief to the patient. They do not abate the nausea of the stomach, while they increase the constipation of the bowels.

“In one case of physconia, connected apparently with a disease of the ovary, I found the swelling altogether removed by a solution of elaterium. It induced great, and long continued nausea and vomiting. In another case, I think there was decided benefit obtained by the use of muriate of lime. Some other facts, shewing the disappearance of morbid growth under the influence of nausea, whether caused by medicine or other means, will hereafter be mentioned.” P. 149.

Dr. Baron here makes many interesting remarks on *chronic* diseases in general, which he believes, with much justice, to be connected with that part of the constitution “on which the growth and support of the body depends.” A person labouring under chronic visceral disorder, we shall find fatigued by slight exertion, while the circulation is hurried, the respiration quickened, and the nervous system agitated by circumstances that formerly did not at all excite him. His sleep is disturbed; his appetite impaired, or irregular. He is oppressed or drowsy, or feels flushed after eating; the bowels are irregular; the urine often thick and turbid. Many of these symptoms, our author observes, may frequently be discovered in young people, anterior to their falling into a much worse condition; and such maladies assuredly will follow, unless obviated by proper means. Defects in the *nutritive system* may be traced in all this; and it is at such periods, Dr. Baron thinks, that morbid changes are most apt to occur, engendering tubercles in the lungs or elsewhere, and laying the foundation for the most fatal cachectic diseases.

“A similar disposition in the system is sometimes announced by other symptoms. The skin perhaps is dry and scaly, or it may be covered with eruptions of various kinds. The eyelids look red; the lips, especially the upper, are thicker than natural; the nose and mouth are surrounded by scabby blotches; the belly is tumid; and glandular swellings may probably be detected in the neck or other parts. These are the outward and visible signs of imperfect nutrition. They are daily seen among the ill-nourished children of the poor, and frequently too in the families of the rich, when a scrofulous tendency exists. In the one case, there may be a positive deficiency of

nutriment; in the other, there is a defect in the organs by which the nutriment is transmitted and assimilated. They may be obstructed altogether; or they may be gorged, and unable to dispose of properly the chyle which has been formed. In this case over-feeding and pampering may produce many of the disorders that are incident to an opposite state." P. 152.

Dr. Baron illustrates this reasoning by analogies drawn from the vegetable and animal kingdoms. Thus when trees grow languidly, are covered with parasitic plants and animals; when their bark is rough, &c. we infer that the soil, the situation, or the conduits of nourishment are in fault. We therefore clear out the roots, supply manure, remove those parasites that have fastened upon the epidermis; and, if not too late, a healthy and vigorous growth results.

On the other hand, let us examine a horse out of condition. His hide is harsh and scaly, closely binding his flesh: his heels are cracked. He is emaciated; short-winded, and unfit for labour. He sweats on the least exertion, and his food passes through him undigested.

"Look at the same animal after the extreme vessels on both the surfaces have been set free, and brought into a healthy state; the internal by purging, and the external by the well-applied labour of the groom. See how quickly and steadily goes on the process of digestion and assimilation; how the skin becomes soft and pliant; how the animal acquires flesh and strength, and spirit, and energy, greater far than he ever attains in his natural state of existence; how all appearances of disease vanish; and how he becomes master of those wonderful powers which astonish us in the hunter or the race horse." P. 154.

From these observations in the stable, we may turn to those who are trained for prize fighting or other extraordinary feats of strength or activity. Their preparations correspond with what has been described. All impurities are eliminated; all the viscera and their excretories are purged by an attenuating diet, laxatives, and diaphoretics.—Then, by judicious feeding, exercise, and friction, the body is brought to a state capable of enduring the most extraordinary exertions.

These facts should not be overlooked; for, surely, any physician might gain credit for bringing a poor emaciated patient, enduring and threatened with many bad symptoms, into a state of vigorous health, even should he be guided by such homely analogies as those stated by our author.

"By keeping the alimentary canal in a healthy condition; by freeing the mouths of the lacteals from obstructions; by

apportioning the diet, both in quantity and quality, to the wants and powers of the system; by avoiding every thing whereby these powers may be either too much excited or exhausted; by applying suitable means to subdue such local affections as may either have existed, or may arise, in the course of the complaint; by attending closely to the state of the skin; by promoting the healthy action of its extreme vessels, by bathings of various kinds, by frictions, and well regulated exercise, we may often witness the most gratifying results, in such persons as I have alluded to, instead of being compelled to watch the progress of fatal disorganizations, which probably would have arisen, had less rational and comprehensive views directed our practice." P. 156.

In illustration of the effects of long continued nausea in exciting the action of the lymphatics to the removal of morbid growths, in various situations, Dr. Baron brings forward some very interesting facts, from the practice of Dr. Jenner, of which we shall present the reader with an analysis.

1. A gentleman with deranged lymphatic system, and affected with scirrhus tumours, was sent to a warm climate for the benefit of his health. The passage was long and tempestuous; and the invalid was *sea sick*, as well as sick of the sea during the whole time. At the end of the voyage the scirrhus tumours were gone.

2. A lady of delicate organization, and strumous habit, received accidentally, a blow on the right breast, followed by some uneasiness, and the formation of a hard tumour on the superior part of the mamma. Another and another succeeded, till three fourths of the breast assumed the characteristic marks of complete scirrhusity. As it resisted all discutient means, Dr. Jenner recommended the knife; but, unwilling to undergo an operation, the young lady repaired to London, and, under the care of a surgeon, took emetic tartar, in nauseating doses, repeatedly during the day, so as not only to be sensibly, but distressingly felt, though never, if possible, to excite vomiting. She grew thin, and somewhat weak; but, as it was manifest that an amendment in the breast was observable, she persevered, till, to Dr. Jenner's astonishment, the absorbents had entirely removed the disease. She gradually desisted from the use of the medicine, and enjoyed good health for many years afterwards.

3. A young woman, 22 years of age, had removed from the country to London, and there engaged in a sedentary occupation. A cough gradually stole upon her, and increased so as to oblige her to return to Cheltenham. When Dr. Jenner saw

her, "no human being could present a more correct picture of a person in an advanced stage of phthisis pulmonalis." From the general account of the symptoms, rise, and progress of the disease, Dr. Jenner could not hesitate to consider this as an unequivocally tuberculous case, and not one of inflamed mucous membranes. She recovered under the *sickening plan*, which she went through with great resolution. The medicines employed for this purpose were tincture of squills, and the tincture of digitalis, three parts of the former to one of the latter; beginning with twenty drops, *ter die*; but the stomach becoming irritable, five drops at last were a sufficient dose.

Dr. Jenner thinks that, on a retrospective view of the most popular remedies hitherto employed in these pitiable maladies, they will be found to consist of such things as produce a *nauseating* effect on the stomach, either from immediate contact, or secondarily through their influence on the brain.

"As we have been for ages, says Dr. Jenner, in total darkness respecting the means of removing tubercles from an internal organ, when formed to any extent, may we not hope, that the little glimmering which this seems to let in upon us, may lead to something beneficial to humanity; and, without putting theory to the rack, may it not be supposed that the stomach and intestines, being thus deranged in their ordinary functions, and the supplies for the absorbents becoming scanty and deteriorated, they the more readily seize on bodies, not those only that are absolutely extraneous, but which come so near that point, as tubercles." P. 162.

PART II. *Accretions of the Serous Membranes of the Chest.*

We have bestowed such labour in conveying a clear analysis of the *first* part of this work to our readers, that the *second* may be compressed into much less space.

Our author observes, that we must distinguish between simple adhesion of the pleura, resulting from inflammatory action, and the granular or tuberculated disease of the said membrane; an affection connected with a disorder of much more serious and extensive nature. The symptoms attendant on such affections, as far as Dr. Baron has been able to judge, are a dull obtuse pain, or rather a sense of weight or tightness about the chest; sometimes pain about the scapulæ and clavicles; quick respiration; short cough, without expectoration. As the disease advances, and the accretions of the pleura are complete, the countenance becomes anxious and sallow; the shoulders are drawn forward; the ribs do not heave freely, but the whole

chest seems to rise at once, with great action of the muscles of the trunk; pulse variable, but easily accelerated by the slightest exertion. When the disease has proceeded far, with much alteration of texture in the pleura or lungs themselves, then dissolution generally takes place suddenly. The effusions which occasionally are found in this complaint, are of the same nature as those in the abdomen, and the result of inflammatory attacks supervening on the original disease. The following case, which is somewhat condensed, will illustrate the foregoing symptomatology.

"Leonard Edwards, æt. 15, affected with frequent dry cough, laborious respiration, sense of tightness and oppression at the epigastrium; nights restless; morning perspirations; tongue white; appetite impaired; pulse 100; countenance sallow; languor and weakness; shoulders prominent; body bent forward; cannot elevate the chest, nor throw the body into an erect position, without great distress. Has been ailing five weeks; complained at the first of pains about the thorax. Blister to the thorax; purgatives of decoct. aloes c.—half an ounce of the mist. ferri compos. bis die.

"Three days afterwards the cough and difficulty of breathing were reported to be so much relieved, that he walked up and down stairs, and in the yard of the infirmary. Still complained of sleeping very ill; an anodyne draught was given at bed time. He took his supper and went to bed. At one o'clock in the morning he suddenly expired.

"*Dissection.* On cutting into the belly, the peritonæum, where it covers the diaphragm, the sides of the abdomen, and the convex surface of the liver, instead of being smooth and shining, was much thickened, and had a rough granulated appearance. The other organs of this region sound. On elevating the sternum, all the thoracic viscera seemed to be united into one mass, without distinction of parts. The pleura costalis and pulmonalis universally adherent, and converted into a dense rough cartilaginous looking substance, which near the diaphragm was nearly half an inch in thickness. It was easily separable into layers, and numberless small tubercles were seen between each. The lungs themselves were turgid with blood, but otherwise healthy. The outer surface of the pericardium partook strongly of the disease of the pleura. The inner was sound. Right auricle of the heart greatly dilated; brain and its membranes sound." P. 174.

Dr. Baron next relates some particulars of two cases where the disease had extended from the pleura to the lungs themselves, with remarkable disorganization of the latter; and then

introduces a long history "*atrocis rarissimique morbi*," which is related by Boerhaave, and he conceives bears a close affinity to the disease under consideration. Numerous other cases are also related or quoted, all bearing upon the same point.

Into the second chapter of this division of the work, entitled, "Further observations illustrating the connexion between hydatids and tubercles," we cannot enter, since it would be impossible to give any connected view of our author's arguments. We must therefore refer to the work itself, those who are interested in the decision.

In the third chapter our author relates some interesting cases of other tubercular disorganizations of the thoracic and abdominal viscera, with remarks on vomica, of which we shall take some brief notice. In the first case there was accretion of the aorta and œsophagus, with ulceration and stricture of the latter, and disease of the cardia. In the second, there was accretion of the aorta to a diseased pancreas; and in the third, there were tubercles hanging in clusters from the valves in the left side of the heart. We shall give an outline of the second and third cases.

J. P. ætat: 53, March 15. Liver enlarged, and can be felt considerably below the false ribs; violent pulsation in epigastrium; sense of weight and pain about the right side; uneasiness and soreness about the shoulders, clavicle, and neck, with distressing restlessness. Lies chiefly on his left side and back; eyes and skin tinged yellow; appetite impaired; pulse 80; urine remarkably high-coloured, staining linen, but not depositing a sediment.

The complaint began six months before, with symptoms of dyspepsia, which were relieved by the usual means. But by irregular living, he got worse, when he was directed to take the blue pill and aloes, under which he so far recovered, that, on the 11th of January, he was able to use violent exercise in dancing for a whole evening. This did him harm—he was sent to Cheltenham, and took mercury in all forms, yet the disease increased. He lost flesh rapidly, and was obliged to take large quantities of opium to procure him rest. The beating at the epigastrium attracted a great deal of his own notice, and harrassed him much. He had a most distressing sense of heat at the stomach, which was effectually relieved by the oxide of bismuth. The disease resisted every remedy, and proved fatal on the 15th of April.

Dissection. Liver much enlarged, and studded with irregularly shaped tubercles, some of them very hard, and almost cartilaginous. The interstitial substance seemed healthy.

The ducts of the gall bladder were thickened and compressed between the hard and dense parts of the diseased liver, and an enlarged and tuberculated pancreas. The *latter* had formed a close and strong adhesion with the abdominal aorta, and its pulsations were transmitted through the medium of the diseased mass to the epigastrium. P. 286.

The third case was that of a woman, 29 years of age, who became an out-patient of the Infirmary early in 1815. She had laboured under amenorrhœa, and complained of pain and uneasiness of the head, shortness of breath, fluttering about the heart, constipation, languor, and depression. She had a peculiar appearance of anxiety and distress in her countenance, which the symptoms did not well account for. She was treated with purgatives and tonics; the symptoms were somewhat relieved, but by no means effectually. In March she was seized with purpura, which harrassed her more or less till she died. She was bled repeatedly and purged, with temporary benefit. She had, at intervals, rigors, followed by pain of the chest, and great difficulty of breathing, the fluttering at the heart being a constant subject of complaint. The uneasiness about the head also increased, and the action of the carotids was so violent as to attract much of her own notice. She now and then fell into a stupor, from which she generally awoke in a state of wildness and amazement. She had also a violent cough, but without expectoration. Pulse about 120, hard and bounding till the last, but never irregular. The night before she died, she complained of great coldness of the extremities. She went to sleep as usual, but died at eleven the next day.

Dissection. No marks of disease any where but in the heart. It was of a larger size than natural, and about ten ounces of fluid were found within the pericardium. The capacity of the right auricle was increased greatly. From the mitral and semilunar valves, small tuberculated fringes hung into the cavities; and in the ventricle, they were likewise attached to the columnæ carneæ. These tubercles were very distinct, about the size of millet seed, and resembled precisely those which our author had seen on the peritonæum.

Our closing limits will not permit us to do justice to Dr. Baron's interesting remarks on vomica. In patients under this affection, he has found a short frequent cough, with little expectoration; respiration easily hurried on motion; pulse readily accelerated; obtuse pain or uneasiness in some part of the chest. Sometimes head-ache is very distressing. People in this condition, unwilling to be thought ill, will sometimes talk loudly, and breathe deeply apparently with ease. They gene-

rally, however, lose flesh; the face becomes pallid and unhealthy looking, with feelings of languor and distress. After a time, the patient is perhaps surprized by the expectoration of a large quantity of purulent-looking matter, after an unusual fit of coughing. He may either be suffocated at once, or he may linger for some time; but death is generally the result.

"In none of these cases that I have alluded to above, had there been any attack of pneumonia; and every pathological work contains accounts of cases where "*bags of matter*" have been found within the lungs and other viscera, even where no symptoms of inflammation previously had existed." P. 295.

Dr. Baron is therefore of opinion, that matter, or that which resembles matter, may be formed independently of the process of inflammation, that is, through the medium of the absorbent vessels, and that many cases of what are termed vomica, are hydatids in a certain stage of their progress.

"It is enough for my present purpose, to show that hydatids, in one state of their existence, do contain such fluids as are found in vomica; and that the phenomena of the disease correspond in every point with those which sometimes attend the growth and progress of these bodies." P. 301.

Of the general merits of Dr. Baron's work, we need not express our opinion in symbol, when an inference is so deducible from the substance. It has been our object in this instance, and it will be our aim in most others, to lay before the reader a connected view and a faithful representation of the facts and opinions under discussion; leaving to himself the free exercise of his faculties, and the full prerogative of his judgment. The utility of this plan, we believe, *cannot*, and the execution of it, we hope, *shall not* be surpassed in any other publication.

Qui cupit optatam cursu contingere metam
Multa fert facitque.

*An Inquiry into the Nature and Properties of the Blood, as
existent in Health and Disease.*

By C. TURNER THACKRAH, M. Roy. Col. Surg. and Lec.
Soc. Aph. 1 vol. 8vo. 132 pages. London, 1819.

"Est quodam prodire tenus, si non datur ultra." HOR.

OF the principles and laws of the animal economy, as Mr. Thackrah observes, few are more intricate than those which regard the blood. The nature of the subject, there-

fore, admits of ample scope, not only for experimental research, but for unbounded speculation, contradictory notions, and inconclusive statements. Still, we are not to entertain the opinion that investigation is fruitless, nor abandon the hope that truth is ultimately discoverable. In the present state of physiology, *data* are greatly wanted, and conclusions cannot be drawn with any thing like mathematical certainty, but turn on the balance of probability or improbability. He, therefore, who adds to the stock of *accurate data*, is a benefactor to medical science, by contributing to the substratum on which the whole fabric must eventually rest.

The work before us is the improved publication of a manuscript Essay on the subject, which gained a prize, offered by Mr. Astley Cooper, for the best Dissertation on the Blood. This, of itself, is a strong recommendation; but the work contains more intrinsic proofs of merit than any medal can bestow.

"The practical parts of this Essay require little comment. Extensive opportunities have been afforded me of examining the blood in disease; and of these I have gladly availed myself. To state what observation and experiment have taught me, has been my principal object; not to form a compilation from the works of others, nor to canvas the justice of their notions, or the correctness of their remarks."

In the first Chapter Mr. Thackrah, among other physiological subjects, discusses the famous Hunterian opinion respecting the vitality of the blood; which, by the following quotation from Hippocrates, appears, like many other opinions, to be of no very recent formation.

"Ηγρομαι δε εμπροσθεν μηδεν ειναι μαλλον των εν τω σωματι ξυνβαλλομενων φρονησιν αν, η το αιμα. Τετο δε οταν εν τω καθεστηκετι σχηματι μνη, μνει και η φρονησις, εξαλλασσοντας δε τε αιματος, μεταπιπτει και το φρονημα."—
DE FLATIEUS.

We might quote *Scripture*, indeed, for the blood being the "Life of the beast;" and Harvey, among others, clearly considers this fluid to possess life and locomotion.

"Habet [scil. sanguis] profecto in se animam primo ac principaliter, non vegetativam modo, sed sensitivam etiam et motivam." *De Generatione*.

But notwithstanding the authority of Hippocrates, Harvey, and Hunter, there is great reason to question the truth of this opinion.

"Another difficulty attends Mr. Hunter's theory. If the blood possess life, where is this property first acquired? We know that the blood is formed from the digestion of various inanimate substances. "Is the chyle alive?" Mr. H. thinks

it is. Admitting the supposition, we must ask, "Is the *Chyme* endued with vitality, or does our food, by commixing with the salivary and gastric juices, acquire its living principle?"

"If in *vitality*, be implied an *independent power of motion*, we should expect that the circulation of the blood was spontaneous, and that its properties were of an active kind. But of such inherent faculty we have no evidence. We observe a simply passive motion of this fluid: the heart impels it, the vessels convey it, the glands act on it." P. 10, 11.

In respect to the *specific gravity* of blood, Mr. Thackrah's experiments, though marked by considerable diversity, lead him to estimate it, as compared with water, at 1050, water being 1000. The medium proportion of crassamentum to serum, in health, is as 13 or 14 of the former to 10 of the latter.

We must pass over all that part of the work in which the chemical qualities of the blood are examined; but shall rest a little on the fourth Chapter, which treats of "the effect of certain circumstances in retarding or accelerating" the *coagulation* of this fluid.

A subject which has particularly engaged our author's attention is the "*comparative periods of coagulation, as influenced by the strength or weakness of the vascular action.*" This is an inquiry of considerable practical importance, as well as physiological interest. The experiments we cannot insert, but only the results.

"From these statements, then, it appears that in the dog, sheep, horse, and hog, *the blood coagulates slowly in regular proportion to the tonic state, or that condition of the system in which the vital powers are strongest.* The blood received immediately before the death of the animal, first assumes this change; next, that which is taken at the middle period; and lastly, that which is received on the first effusion from the wound." P. 48.

This statement is corroborated by the experiments of Hewson and others; and in bleeding the human subject, Mr. Thackrah says, the same rule will hold good, to wit, that the first flowing blood has the least disposition to coagulate. Thus, for instance, in Exp. xviii.

"From the arm of a female labouring under fever, blood was drawn to the amount of a pound and a half; a portion of which, received in a tea-cup on the *first effusion* remained fluid for *seven minutes*; a similar quantity taken immediately before tying up the arm, was caked in 3 min. 30 sec.

Besides these observations, many more might be adduced, if it were necessary, to prove that "*a state of diminished*

tone is most favourable to the concretion of the blood." A tendency to deliquium has also a considerable effect.

"When concretion has been noticed to take place in five minutes, the occurrence of faintness, I have remarked, has immediately effected such a change in the state of the blood, as to induce this process in two minutes, and when ninety seconds were required, deliquium has instantly changed the period to forty."

This is a fortunate circumstance ; for, as the first check to bleeding is given by the formation of coagula on the mouths of the vessels, were this process *slow* instead of quick, in proportion to the degree of debility, every considerable hæmorrhage, especially uterine, would prove fatal.

The fifth Chapter, on "the cause of the blood's coagulation," is very interesting, and we regret that we cannot do justice to it in this place. From a great variety of experiments, most ingeniously devised and skilfully executed. Mr. Thackrah has come to the conclusion that the *fluidity* of the blood depends principally on the *vitality* of the containing vessels, and coagulation on their death.

"The inference drawn from the observations of this section is obvious. Experiments, in which the greatest attention was paid to accuracy in execution, and honesty in detail, have shewn that blood retained for the requisite period, is found fluid in a living vessel, partially or irregularly coagulated in a semi-living vessel, and firmly concreted in one devoid of vitality. I conclude, therefore, that *the vital or nervous influence is the source of the blood's fluidity, and its loss the cause of coagulation.*" P. 79, 80.

CHAP. VI. Changes produced in the blood by disease.

This is a subject too little attended to in modern times. For, although but few indications can be safely drawn from the state of the blood *alone*, yet, in conjunction with all the symptoms and phenomena of disease, it becomes an important circumstance of attention. It is on this chapter, therefore, that we are inclined to dwell with some analytical minuteness.

We shall pass over Mr. Thackrah's observations on the quantity, colour, and temperature of morbid blood. Its *specific gravity*, from our author's experiments, is *diminished* in disease ; but this diminution has not been proved to have any relation to the degree or character of the morbid action.

"The marked disparity between the periods of coagulation, when the system is under the influence of active inflammation, or remains unbroken by disease, and when the vital powers are reduced, clearly points out the importance of the subject

in a curative view. Whoever pays attention to the circumstance, will, I am persuaded, accede to the opinion, that *the speedy occurrence of concretion on the effusion of blood, affords a reason sufficiently cogent for the discontinuance of depletory measures.*" P. 90.

The firmness of the blood's coagulum has been considered a distinctive mark of the tonic state of the system—its great tenacity a characteristic of inflammation—its looseness a sure proof of debility. During inflammatory excitement the fibrine of the blood is known to be considerably augmented. Mr. Whiting found it compose $\frac{7}{1000}$, in acute rheumatism; whereas, in health, it made about $\frac{1}{1000}$ of the blood. The effects of this increase of fibrine on the coagulum are great, as might be expected, the crassamentum being larger, and much more dense in its texture.

"Reflection on this circumstance has generally a considerable effect in the treatment of disease; most practitioners thinking themselves authorized to repeat venesection, where the first-drawn blood has a firm crassamentum, and obliged to desist from the antiphlogistic regimen, when the coagulum is readily broken. These marks, however, ought not to be wholly relied on. In acute diseases, it is frequently found that the serum is slowly exuded; and hence, unless a due time elapse before examination, the coagulum is soft, from the serum it contains. Here, upon the general principle, the practitioner would desist from further evacuations, concluding the system to be greatly reduced. Sometimes, also, from the adhesion of the coagulum to the side of the vessel; from the kind of vessel, or other cause, the separation of the serum is prevented for many hours; yet, on the removal of such attachment, or on the division of the coagulum, the serum is effused, and the crassamentum becomes firm. The size of the vessels has also a considerable effect on the exudation of the serum, and consequently, on the density of the remaining coagulum. The fluid of blood received in a bason, is usually in greater proportion than that contained in a small cup; and, of course, the cake in the latter is looser than that of the former. If, however, on the *division of the coagulum, at the expiration of from eight to twenty-four hours, there ensue no considerable effusion of serum, and the crassamentum remain extraordinarily firm*, I believe that *further depletion is fully warranted.*" P. 95-6.

In acute maladies the coagulum is generally dense; nevertheless we frequently derive much benefit from bleeding, even when the crassamentum is soft and yielding; nor should we,

in such cases, hesitate to repeat the depletion, provided other circumstances indicate its propriety. Dr. Watt, in his work on Diabetes, remarks, that great advantage accrued from venesection, though the coagulum was loose and black; and that, on repeated evacuations of blood, the crassamentum became much firmer, and of a more natural hue. But it is by no means to be inferred that *inflammation* exists in every case where blood-letting proves beneficial.

The relative proportion of serum and crassamentum affords considerable evidence, Mr. Thackrah thinks, of the state of the system. He concludes, from experiments, that the serum is *usually* in a proportion *inverse* to the strength of the system. It is a curious fact that "*the serum is relatively increased during the continuance of bleeding*;" and it is surprising how great a change in this respect the lapse of a minute produces." In this place Dr. Weatherhead suggested the following query.

"Does not the abundance of serum in the last drawn cup, arise from the immediate effect of the bleeding in rousing the energies of nature to absorb serum from the different cavities, and thus occasion the fact you have remarked. If this be the true cause, it will likewise account for the benefit derived from, and authorize the detraction of blood in both sanguineous and serous extravasations, wherein the strength has not thereby been materially diminished." P. 98.

We have not the least doubt of the truth of Dr. Weatherhead's hypothesis. Any evacuation from the system, as vomiting, purging, sweating, or bleeding, sets the absorbents to work, unless these evacuations be carried to excess, when a contrary effect seems to be produced.

We introduce the fifty-first experiment in illustration of this curious phenomenon.

"About one pound of blood was subtracted from the arm of a muscular man, labouring under angina pectoris. It was weighed three days afterwards.

	Ser.	Cras.	Ser.	Cras.
1 Cup had	160	360 or as	10 to	22·5
2	420	594 —	10 —	14·1
3	418	736 —	10 —	17·6.

Great faintness occurred on filling the third cup." P. 99.

However the fact may be as to the proportion of the blood's constituents during hæmorrhage, certain it is, observes our author, that frequent bleeding diminishes the quantity of the crassamentum in the circulatory system; and equally certain

that, in most diseases of the atonic character, and in a reduced state of the vital powers, the quantity of serum is large.

“It is by no means an unfrequent occurrence, however, for debility to be combined with acute disease. In this case, according to the opinion I have stated, are two principles or causes, opposite in their nature, and tending to produce contrary results, and in proportion as the one exceeds the other, shall we have a diversity in the quantity of serum. P. 102.

As manifesting the necessity of moderating the quantity of crassamentum in febrile and inflammatory states of the system, Mr. T. relates some cases in illustration. Thus in Exp. 58, “from the first attack of the complaint to the second venesection, the child was in great suffering; but no sooner was the proportion of the crassamentum reduced to its healthy degree, than the pain was greatly relieved, and the malady in twenty-four hours completely removed.”

It might be objected here, however, that the disappearance of the crassamentum was rather the *effect*, than the cause, of the reduction of vascular excitement.

Dr. Mills, of Dublin, in most of the cases of acute fever which he records, found the serum in very small proportion to the crassamentum. In some acute maladies, scarcely a drop of serum is exuded; and what is remarkable, a similar circumstance has been observed in *asthma*.

The coat of yellowish size which sometimes covers the surface of blood, has greatly engaged the attention of the medical world, and has usually been considered the criterion of inflammation, since it is commonly found in acute rheumatism, pleurisy, and other phlegmasiæ. It seems probable that a variety of circumstances tend to produce this fibrous tunic on the blood. It is well known to be pretty generally present in pregnancy, especially in the advanced stage. In cases where the mineral waters, and even the vegetable acids have been freely administered, this phenomenon has been observed—in fact, it will often exist when the system is under any actively morbid influence. Various causes have been assigned for the buff coat of the blood; but none of them are free from objections. The following is our author’s solution.

“On drawing blood during high vascular action, I had repeatedly noticed, that the first cup, which remained fluid the longest had the strong size—the surface of the second had transparent spots, and the third, which was soonest concrete, had no such appearance. Hence I was led to infer, that the formation of the buff-coat in such diseases depends on the

blood's indisposition to coagulate, such tardiness of concretion allowing the red particles to subside." P. 111.

Mr. Thackrah is inclined to believe that the vital energy is preternaturally excited in active disease, and thus, by its effects on the blood vessels, protracts the period of coagulation.

"The practical conclusions, which this subject induces, demand serious attention. The fibrous tunic is admitted to present itself in cases of the greatest vital debility,—cases in which, the loss of but a moderate quantity of blood, would hurry the patient to his tomb; while this fancied criterion of acute disease, is often, nay commonly, absent in maladies, where severe inflammation is combined with the greatest constitutional strength. In affections, moreover, which require the repeated abstraction of blood, it has often been remarked, that the buff coat has not appeared on the first or second bleeding, yet on the third or fourth, it has been copiously exhibited. What shall we say, then, of the doctrine of this tunic's characterizing inflammatory action, and warranting the repeated abstraction of blood,—the doctrine, I mean, unlimited and unguarded?" P. 115.

We must now conclude, as our limits are exceeded. Mr. Thackrah's little work, as our readers must perceive, is by far the best which we have on the subject, and entitles its author to the thanks and esteem of his professional brethren. *Ibid*.

Further Observations on the Internal Use of the Hydrocyanic (Prussic) Acid, in Pulmonary Complaints; Chronic Catarrhs; Spasmodic Coughs; Asthma; Hooping Cough; and some other Diseases. With full Directions for the Preparation and Administration of that Medicine. By A. B. GRANVILLE, M.D. F.R.S. F.L.S. M.R.I. Physician in ordinary to his Royal Highness the Duke of Clarence; Licenciate of the Royal College of Physicians of London; and Physician-Accoucheur to the Westminster General Dispensary. London, 1819. Octavo, pp. 82.

DR. GRANVILLE, after detailing the modes of preparing, and the physical properties of, the Prussic acid, prefaces his account of its effects upon the human frame by remarking, that though poisonous in itself, like many of our best remedies, it may be used with perfect safety and advantage when properly administered; and, that no case has yet been recorded in which it has proved either fatal or injurious.

Another objection which he admits to be better founded, viz. that it has failed in producing any good effect in some of the complaints in which it has been exhibited, the author thinks *only* goes to prove a want of sufficient knowledge in the person employing it; but, we would ask, may it not also, peradventure, prove the incompetency of the medicine employed? The following are the effects of this remedy as stated by Dr. Granville.

“The Prussic acid is evidently sedative, more so even than opium; but its specific mode of action is somewhat different, both as to its progress and effect, from that of the latter substance. The Prussic acid, when administered to a patient exhausted by disease, and by the means employed to cure it, appears to exert an immediate influence upon the nervous system; it gradually diminishes all irritability, checks a too rapid circulation, and calms many of the symptoms of fever. If a dry cough be present, it promotes expectoration in the first instance, and subsequently stops the cough itself. The spirits, before exalted, soon feel the quieting impression of the acid; they become subdued; the speech, countenance, even the expression of the eyes, assume a character of unusual meekness; there is a relief from pain and actual suffering; the patient feels it, and is grateful: sleep comes on undisturbed, respiration is soft, and the pulse more quiet than at other periods of the complaint, having lost the thumping beat of irritation. In some few cases these sedative effects are so much more considerable, that the patient expresses that he feels himself as if only *half alive*. On those occasions there is an *apparent* entire prostration of strength, great lowness of spirits, and unwillingness to move, speak, or take food; life seems suspended, yet the head and mind remain clear and intelligent; there is a total absence of pain; neither does the patient complain of any symptom of local or general irritation; the heat of the skin is natural, and the pulse, in the midst of this dead suspense, continues its course steadily and quietly. This state of things lasts from twelve to twenty-four hours, when it ceases; and every organ is gradually restored to its former elasticity.

“But it should be borne in mind that such instances of great depression, produced by the acid, are extremely rare, and indeed seldom occur where tonics, or a proper quantity of nourishment can be given to the patient, at the same time he is taking the acid. There is scarcely a remedy which does not, more or less, present some anomalies in its effects, dependant on the particular idiosyncrasy of the patient. In some few cases the Prussic acid disagrees with the stomach, and then

it neither can, nor ought to be, persisted in : it also occasions giddiness in some individuals, in which case it is necessary, either to discontinue it, or diminish the dose, and associate it with slight stimulants. Opium, henbane, &c. have often, in this respect, exhibited the same occasional deviations from their usual mode of action.

“But the Prussic acid has never yet been found to produce the head-ache, and heaviness occasioned by laudanum ; the fluttering and palpitations brought on by hemlock ; nor the parched month, and irritability of the throat, arising from the action of belladonna. The Prussic acid moreover, acts gently on the bowels, in the first instance, and when after some days they seem to fall into a torpid state, the mildest medicines, and those in smaller quantities than usual, suffice to produce the desired effect, when combined with the acid.”

The author next proceeds to enumerate the diseases in which it has proved beneficial. Its effects “in almost every kind of cough, particularly of a spasmodic nature, are highly satisfactory.” “In hectic fever it affords ease ; lowers the pulse ; diminishes the number of paroxysms ; works a favourable change in the action of the lungs and their circulation, while the morbid heat of the skin, and the circular flushes of the cheeks, gradually disappear. The night sweats are also soon suspended.” p. 21. “In the treatment of confirmed consumption the Prussic acid, even at the approach of death, is the most advantageous palliative that can be employed. Greatly superior, indeed, to any hitherto adopted.” p. 22. Asthmatic complaints are also stated to have been greatly relieved by it ; and from analogy, the author is sanguine enough to expect much benefit from it in spasms of the stomach and diaphragm, and even in “locked jaw, tic douloureux, and, perhaps, hydrophobia !” p. 23. “*Credat Judæus apella.*” The following instance, however, we can fully credit : “but I have had no experience of its utility in such affections.”

Dr. Granville has successfully employed this medicine in the dry convulsive spasmodic cough, which may be called sympathetic, as depending entirely on a morbid state of the liver, stomach, spleen, &c. With regard to hooping cough, “it may be stated, without presumption, that no case need be suffered to proceed longer than eight or ten days if the Prussic acid be timely and cautiously administered ; and, it is singular that children bear the action of this sedative medicine, in small doses, better than adults,” p. 24. In inflammatory affections of the lungs, which have a tendency to recur on the slightest cause, and to terminate in hectic and purulent expectoration,

and after depletion cannot be carried any further, Dr. Granville thinks the Prussic acid will produce the most advantageous effects; and also in those pains which attend and follow abortions, and in hæmoptysis. p. 25, 6, 7. Some cases follow, illustrative of its good effects in consumptive and other cases above mentioned, by the author, Dr. Majendie, Mangini, Scudamore, and Mr. Thompson, of Sloane Street; and, according to their observations, no bad effects had ever resulted from this medicine, though great care is admitted to be requisite in its exhibition.

Towards the conclusion of the volume is a valuable communication from the latter gentleman, with a detail of four cases, in which he exhibited this medicine. He observes, "I have prescribed the acid in a great number of instances, with variable success; but the benefit it has produced is amply sufficient to authorize me to add my testimony in favour of its value as an important addition to the host of direct sedatives." P. 67.

The eighth section is occupied with the mode of prescribing the prussic, or hydro-cyanic acid. It decomposes most of the salts used in medicine, particularly those of antimony and soda. Its affinity for the alkalies and earths is inconsiderable; that for the former is so weak, that even carbonic acid displaces it. Hence it may be given with carbonate of potash, forming one of the most successful modes of prescribing it in spasmodic and whooping coughs. It cannot be administered with the sulphurets. It may be given in vegetable infusions, with the addition of syrups if necessary. With tonics it may be associated with real advantage, as with the filtered infusions of bark, columbo, cascarilla, or even sarsaparilla, or in incipient pulmonary complaints in a strong decoction of lichen islandicus. It is indispensably necessary to use no other than distilled water in all prescriptions with the prussic acid; otherwise decomposition will take place. p. 60, 63. Some formulæ follow, in which eight or ten minims of the acid are exhibited in six or eight ounces of the vehicle; a table spoonfull every two or three hours. p. 63. When the prussic acid produces nausea, vomiting, or dizziness, which it will do in some individuals on the very first or second day, it is advisable to abandon it immediately, for there is no chance of its ever agreeing with the patient; but such effects have not occurred above five or six times in 100 cases in which it has been exhibited. p. 39. During the first days it proves gently aperient; and when it has this effect, the mildest purgatives will suffice to produce the necessary evacuation. Mr. Thompson states his general practice in catarrhal affections and chronic coughs to have

been, after purging, to give two minims of the acid in a spoonful of distilled water or almond emulsion, every two or three hours during the day, increasing the quantity two or three minims on the whole portion taken in the twenty-four hours, every day, until the cough was subdued. p. 70. The greatest amount to which it has been carried by him was twenty-four minims in the day to an adult, and six to an infant. For infants between four months and a year old, he prescribed two minims in 3ix of distilled water, with 3j of the syrup of Tolu, coch. min. ji. 3tiis. horis sumenda. As to its *modus operandi*, he observes, "the prussic acid, when taken into the stomach, produces its action on the circulating system, evidently through the medium of the nerves, the energy of which it considerably lessens and even altogether destroys when the dose is sufficiently strong. In no case have I remarked that any excitement precedes its sedative effect, a circumstance which distinguishes it from every other substance belonging to the class of narcotics." P. 67.

There are some typographical mistakes which ought to have been noticed in a table of errata, as in the formula, page 76, and at page 81, *obnoxious* is used instead of *noxious*. In presenting a short but faithful analysis of this little volume, we will not say, "*cras credemus, hodie nihil*," but we shall feel much contented, and deem the prussic acid no contemptible acquisition, if experience shall prove it to deserve even a moderate competency of the virtues and efficacy here ascribed to it. We recommend this little work to the perusal of our brethren. *Ibid.*

We have just received from London, Nos. 1 and 2, (for November and December, 1819,) of the MEDICAL INTELLIGENCER, and MONTHLY ANALYTICAL INDEX to the Periodical Publications of the present Day—and do not hesitate to say, if well conducted, it will constitute a valuable additional means to those now employed, for diffusing information in relation to medical literature. We extract the following article from the December Number. Ed.

MEDICO-CHIRURGICAL TRANSACTIONS.

Contents of Vol. 10. Part I.

Account of the Rheumatic Inflammation of the Eye, with Observations on the Treatment of the Disease; by JAMES WARDROP, Esq. F.R.S. Ed.

IT is only of late years that the varieties of Ophthalmic Inflammation have been accurately described. Mr. Wardrop in his "*Essays on the Morbid Anatomy of the Eye*," has

shown "that the inflammation of each particular texture of the eye is accompanied by a distinct class of symptoms, each assemblage characterizing one species of ophthalmia." There are other varieties of ophthalmia, however, which arise apparently from something specific in the cause producing them: thus, "the gonorrhœal, the syphilitic, the scrofulous, the gouty, or the rheumatic inflammations of the eye," are each different from their fellows, and from the other species of ophthalmia. In inflammation of the cornea, the albuginea is of a bright crimson colour; in the pustular ophthalmia, the redness is confined to particular parts; in the puriform ophthalmia, the vessels have a peculiar mode of ramification, and the trunks are superficial; in rheumatic ophthalmia, the colour is a brick red, from admixture of a bilious yellow colour with the crimson. The vessels are almost equally distributed over the white of the eye, and run in straight lines from the back of the eye to the cornea, "but neither pass over it, nor leave the pale circle around it, which is so striking when either the choroid coat or iris is inflamed." The conjunctiva is often slightly swelled, though the vessels are not superficial. As the disease advances, the cornea becomes dull and clouded. Abrasion of the corneal conjunctiva takes place, generally near the circumference. The eye is, in the early stages, dry; in the later, there is a very copious secretion of tears. The eye-lids are commonly but slightly inflamed. The pain usually begins in the head, is sometimes in the eye-balls, but more frequently on the temple, or over the whole side of the head. It is of a dull agonizing kind, and varies much in degree, at different times, but is permanent. The scalp is often painful. The great paroxysms happen during the night. Light does not produce much increase of pain. Rheumatism is said chiefly to attack the fibrous membrane, and this inflammation is probably situated in the sclerotic coat. One eye, only, is usually affected, and the constitution suffers from feverish symptoms, which are, however, always accompanied by much derangement of the gastric viscera. The complaint, "may, in many instances, be traced to a sudden change of temperature." It resembles, the most closely, the syphilitic and the gouty ophthalmia; but the constitutional symptoms will distinguish them from each other. Mr. Wardrop makes in this part, many good observations on the diagnostic symptoms of the different kinds of ophthalmia. The treatment consists in evacuating the aqueous humour, and applying fomentations, with the vinous tincture of opium, to remove any consequent irritability of the eye. General remedies, especially for the biliary derangement, are

required. Emetics are much recommended at the commencement. Local bleeding is said not to be efficacious. After the first great symptoms of inflammation have subsided, bark is said to be a specific. Mr. Wardrop uses the mineral acids from the beginning: but he says, that mercury aggravates the disease.

Memoir on a new Mode of Treating Bronchocele, by Dr. QUADRI of Naples: communicated in a Letter from Dr. SOMERVILLE to the President.

THE new treatment consists in passing a seton through the substance of the enlarged gland. Several successful cases are related. Dr. Quadri passed the seton sixteen times, and always in a different direction, but never saw it followed by any evil consequence. Great inflammation and suppuration follow, and the tumour is speedily reduced. More than one seton is required in each case, as the gland is reduced only in the immediate neighbourhood of the seton. In some cases, the introduction of irritating substances, especially of the root of black hellebore, is required to produce the necessary quantity of inflammation. This practice seems to be fairly entitled to a trial by English surgeons. Some years ago, a case of bronchocele, attended with severe symptoms, was successfully treated at the Westminster Hospital, by keeping up a drain of matter from the parts for a considerable time.

On the Elephantiasis, as it appears in Hindostan; by JAMES ROBINSON, Esq. Superintendant of the Insane Hospital at Calcutta.

THIS is a very valuable paper; it is written with great clearness, and altogether, it reflects much honour upon the author. He describes two species of elephantiasis; but they are so entirely different from each other in their symptoms and treatment, that they would, more properly, constitute two separate diseases. The first commences by the appearance of light-coloured, wrinkled, and entirely insensible patches upon the skin. Searing them with a hot iron, produces no pain. They gradually extend over the whole body. It would seem, that until this time, the patient is quite well, and the disease is only a blemish. In time, however, the constitution begins to be diseased. Its functions are impaired, the pulse gets slow, and "as if moving through mud;" the mind becomes dull, and the patient seems half asleep. The soles of the feet, and the palms of the hands now begin to crack, and the joints ulcerate. Part after part drops off, until the feet and hands are gone, and little

else is left but the trunk ; “when the patient will often crawl about until old age comes on, or he is, at last, carried off by diarrhœa or dysentery.” The appetite continues good to the last, and the bodily functions are not much disturbed. Mr. Robinson calls this disease, Elephantiasis anaïsthetos, and says, it is probably the “Baras” of Avicenna. Neither the nose, the bones, nor the larger joints are ever affected ; but one or more of the smaller ones is lost every year by ulceration ; the part heals after the bone has fallen off.

The other species is the tuberculated elephantiasis, described, as Mr. Robinson says, more accurately by Dr. Bateman, than by any other author. In this disease, there is no insensibility of the skin, the limbs do not ulcerate and drop off, nor is the mind rendered obtuse, nor the body inactive, as in the former disorder : and there are other very important symptoms in the one disease, which do not belong to the second. The semi-transparent, splendid, oily, tuberculated state of skin, the ulcerations of the nose, the integuments of the cheek, of the temples, the lips, and even of the ears, the consequent destruction too of the palate, and the uvula, the hoarse voice, and the flabby, wrinkled fulness of the integuments ; these sufficiently mark the tuberculated species. In the commencement of the latter only, is the venereal ardor increased ; for in the later stages, the testicles are absorbed ; in which case, an oblong glandular swelling appears in the groin, lying exactly along the course of the vessels.

The first disease may be cured in the early stages, by stimulating applications, such as solutions of corrosive sublimate and blisters to the skin, and a mixture of mercury and of antimony, with the powdered root of the *asclepias gigantea*. Mr. Robinson’s prescription is calomel, gr. ss. pulv. antim. gr. iij. pulv. radicis *asclepiæ giganteæ*, gr. vi. ad x. ter in die. We hope that future experience will verify the good opinion expressed by Mr. Robinson of the *asclepias*, as a medicine. It is called *mudar* or *mudarrh*, by the natives, and is said to be a most valuable “vegetable mercury,” “the most powerful alterative hitherto known,” “an excellent deobstruent ;” and Mr. Playfair, the discoverer, writes further to Mr. Robinson, that “in all affections of the skin, I have found it very effectual, and in the *jugaru* or leprosy of the joints, I have never failed to heal up all the ulcers, and have often produced a perfect cure.” Its chief value seems to be in causing a great and rapid determination to the skin, and in recruiting a shattered constitution. The useful part is the bark of the root, and the plant should be gathered in March, April, or May.

The powder is also applied externally in the form of a poultice. If half the encomiums here bestowed upon this medicine be true, it will be indeed a valuable addition to our materia medica.

Whilst the mudar cures the first disease, it aggravates the second. Arsenic is stated to be the best remedy for the tuberculated species, but "the certain cure" is still a desideratum.

Observations on the Diseases of the Teeth; by THOMAS BELL, Esq. F. L. S.

FACTS are brought in this paper to prove, that the teeth "are, strictly speaking, organized." One of these is the occurrence of abscess in the bone of a tooth communicating with the natural cavity of the fang. The second is a case, where, on the enamel of a tooth being splintered, the exposed bone was found to be exceedingly tender. Caries, the author says, and perhaps truly, can only be explained by admitting the vitality of the tooth. It is supposed to be produced by the separation, from inflammation, of the membrane lining the cavity, from the surface of the bone. Mr. Bell "believes then, that inflammation and mechanical injury are the only causes of caries," and that the contact of a caries tooth has no effect in producing decay in another. An excellent case of inflammation, probably of the periosteum, on the outside of the fang, is then given. The symptoms were intolerable pain, the tooth loosened and somewhat raised, and perfect inability to perform mastication. All the molares on the affected side participated in the disease, and the fang of one which was drawn, was found to be "completely enveloped in a thick coat of adhesive matter." Scarifications and evacuations cured this disease in a few days; neglect of this state of disease is said to produce abscess, and we well know, that bags of matter are often found appended to the fang, on drawing particular teeth. The editor has seen the removal of a tooth affected by a similar state of disease, instantaneously cure hemicrania. Mr. Bell concludes, by asserting, and with justice, that the diseases which he has described are all produced by inflammation.

Cases of Tumours within the Pelvis impeding Parturition, with Remarks; by FRANCIS MERRIMAN, M.D. F.L.S. &c.

THIS is a very comprehensive paper upon difficult labour occasioned by tumours in the vagina. Dr. Merriman relates five cases which occurred under his own eye; in all of which, the labour was rendered exceedingly difficult. Two of the women died immediately, one of dropsy eighteen months af-

terwards, one had permanent stillicidium urinæ remaining after the labour, and one recovered entirely, in consequence of the tumour being pushed above the brim of the pelvis during the labour. In three of the cases, the child's head was opened; in one, the child was born dead; and in one, it was alive and healthy. The tumours were probably ovarian in all the cases but one. In one of them which was proved by dissection to be ovarian, the cyst contained a fluid which became solid, and butyraceous on standing, and was determined by Dr. Bostock, to be "a concrete animal oil, nearly in a state of purity, very similar to butter or lard;" in another, the contents of the tumour were "a granulated sebaceous matter," containing neither hair nor bone, except something like a tooth; in a third, the matter was adipocerous; it resembled tallow in colour, and was disposed in layers, "the diameters of each being about the breadth of a sixpence:" in the other two, the tumours were not opened, nor examined. Dr. Merriman refers to 13 other cases, and from the whole 18, "comprehending 38 lives, it is seen, that, of the women, 6 recovered perfectly; 3 imperfectly, and 9 died: of the children, 2 were born alive; 1 was born alive, but was incapable of living; 15 were dead, and 2 are uncertain; probably one was alive and the other not. So that the lives actually preserved, amounted to 12; ditto not preserved, 26." The paper concludes with general reflexions by the author. He considers that such tumors are not uncommon; that practitioners have been accustomed to trust such cases to nature longer than is prudent; that the perforator, even when applied early in labour, is not always effectual; the cæsarean operation may in some cases be taken into consideration; that opening the tumour seems from experience and theory to afford the most probable means of relief; and that in some (ovarian) instances, the tumor may be pushed up out of the way of the head, in the early part of the labour.

An Account of a Substance obtained from a Diseased Ovarium, with some Remarks on Diseased Secretions of an Analogous Nature; by JOHN BOSTOCK, M.D. F.R.S. and L.S.

THIS paper is an appendix to the last by Dr. Merriman; but Dr. Bostock has introduced much new matter respecting "different substances, the produce of the ovarium," and probably proceeding from the same secreting surface in different states of action;" and he says that, "according to the nature or degree of action, the same organ may generate the common dropical fluid, which essentially consists of albumen; a proper

mucous fluid; and a perfect adipose matter, together with various shades or combinations of them." Some good remarks follow upon the function of secretion. This function is referred to the capillary arteries, and is considered to be a *vital* operation. Dr. Bostock speculates upon the following as some of the modes, in which the blood may be altered by the secreting arteries. "The relative proportion in which the constituents of the blood enter the vessel; the nature of the blood with respect to its arterial or venous state; the rapidity with which the fluid is propelled through the vessel, the degree of compression or agitation which it experiences during its passage, and the situation in which it is deposited, after it leaves the vessel, whether it be in a close cavity or exposed to the atmosphere, or to any other agent, or whether it be so placed that a portion of it is subject to be taken up by absorption, as rapidly as it is discharged." Should secretion be influenced by circumstances such as those, Dr. Bostock ingeniously surmises, that in pathology, some opinions of the condition of vessels may be formed "from the substances proceeding from them." Perhaps these speculations have too mechanical a cast; although as our knowledge of such matters becomes more accurate, we shall probably find, that the vital actions resemble the physical actions, at present recognized, more closely, than we now think likely.

Observations on the Changes which the Animal Body undergoes in a Hot Climate after Death. By JOHN DAVY, M.D. F.R.S. dated Kandy, Ceylon, June 14, 1818.

DR. DAVY states, that immediately after death, the arteries as well as veins, are full of blood, (this may be doubted); that in 12 or 16 hours the blood will be accumulated in the veins, and the viscera will be turgid; in 20 or 30 hours, that the serous and mucous membranes will appear to be red and inflamed, especially such as are most exposed to the action of the blood; that effused serum will become bloody, the viscera dark and livid, and the track of the large vessels streaked from extravasated blood. This appearance of inflammation from exudation of bloody serum is frequently mistaken for real inflammation, and the difference is often very difficult or even impossible to be recognised. This circumstance may frequently occasion difficulty in post mortem examinations; but, we have, ourselves, been much more puzzled in our dissections, by the frequent almost impossibility of distinguishing between mere venous cadaverous accumulation, and distention of the artery from inflammation. One guide to us has been, to find, whether the

fulness of vessels is connected with full trunks, or whether it is in insulated patches, with empty trunks ; but the discrimination is often very difficult. However, Dr. Davy's observations show the value of making dissections as soon as possible after death ; indeed he says, that in hot climates, few dissections are of any value if made after a lapse of more than six hours. The number of hours should in all cases be noted.

*On the Operation for Aneurism, by GEORGE-NORMAN, Esq.
of Bath.*

IN all the cases, here related, the single ligature was used with the precautions suggested by the experiments of Dr. Jones and others. Case 1.—A femoral aneurism, apparently connected in its origin, with general increased fulness of blood. The ligature came away in 19 days, and the patient was discharged in seven weeks, the tumor being then not one fourth of its previous size. Twice, during the cure, inflammation attacked the tumor ; but it was relieved by bleeding and evacuants. Pulsation recurred in a few days after the operation : this afterwards ceased, on moderating the action of the arteries, by bleeding, rest, and an antiphlogistic regimen. Case 2.—A femoral aneurism : the operation was performed by Mr. Cooper's incision in the direction of Poupart's ligament, and was found much easier than in the former case, in which Mr. Abernethy's longitudinal incision was adopted. Inflammatory symptoms, with sloughing of the tumor, occurred, and the patient died on the 12th day after the operation. Signs of extensive erysipelatous inflammation were found after death, both in the artery and in the neighbouring intestines ; and a pint of fluid and coagulated blood was found in the tumor of the aneurism. This aneurism was of the diffused kind, and arose from rupture of the middle and inner coats, and consequent escape of blood between the muscles. The unsuccessful issue was partly attributed to the operation having been delayed too long. Case 3.—The inguinal artery tied in two places, two inches apart, for wounded femoral artery. This was a deplorable, but interesting case. The boy was nearly dead, when brought in, from loss of blood, and the occurrence of severe diarrhœa after the operation, reduced him so much, that sphacelus of the foot took place. Amputation was performed, and although large sloughs had formed over the bones of the pelvis, he got well after two months suffering. Case 4.—A popliteal aneurism. After the fifteenth day, pressure and cold lotion were used to reduce the remaining tumor. Case 5.—A popliteal aneurism in the other thigh of the man, Case 4. In this

instance, a single catgut ligature was used, the ends of which were cut off close to the knot. The ligature was not seen to come away, but suppuration continued for a great length of time. Case 6.—A popliteal aneurism. This case was perfectly similar to the last. In both, the wounds were longer in getting well, than under the ordinary treatment of the ligature, and therefore the plan did not succeed. Mr. Norman thinks these cases prove, that the single ligature is perfectly sufficient to prevent secondary hæmorrhage. He gives more than 20 instances of tying the carotid with a single ligature, in sheep, and with similar results.

On Urinary and other Morbid Concretions, by WILLIAM HENRY, M.D. F.R.S. &c.

DR. HENRY gives here the result of his examination of 187 urinary calculi; and he inserts a table, which shows the comparative numbers of each species of stone. Those which consisted chiefly of uric acid, were in the proportion of 1 in 2. 6: of earthy phosphates; 1 in 8. 5: of oxalate of lime: 1 in 17: Compound; 1 in 23. 5: of alternate layers of uric acid and phosphates; 1 in 4. 8: of oxalate and phosphates; 1 in 11. 6: of oxalate and uric acid; 1 in 17: of uric acid, oxalate and phosphates; 1 in 26. 5: and of cystic oxide; 1. 98. 5. It appears, that in the great majority of cases, a central nucleus may be found; so that Dr. Henry agrees with Fernelius and others in supposing, that the stone is essentially a disease of the kidneys; inasmuch as the nucleus is generally formed there. He says, however, that districts, in which the disease of gravel is very common, may still afford few instances of the stone; and he quotes the neighbourhood of Manchester as an example. From another of his observations, it may be deduced, that future discoveries will probably increase our remedial powers in cases of stone; since he found those calculi, which had been formed of late years, to be materially different in composition from such as had been formed at an earlier period; and he explains it, by supposing, that the progress of the disease receives more interruption from our treatment at present, than it did from the old mode of treatment; which is as much as to say, that, the remedies we employ, do produce some effect upon the disease, although we are still unable to regulate that effect properly. The fault in our present practice is similar to that which pervades our practice in all chronic complaints; namely, that we are too solicitous to remove the effect, and pay too little attention to the cause which produced it. We shall not cure the gravel or stone until we

have investigated, in each case, the habits of life, and especially of diet, which predispose to the disease, or produce it. We may prevent the formation of the uric acid by giving alkalies; but we can prevent its reformation, when the alkalies are discontinued, which is the grand point, only by changing the erroneous habits of life which give occasion to it.

It is obviously of much importance to know, of what the nucleus is generally formed. Out of the 187 calculi, it was composed of uric acid in 158 cases. Several observations are made by Dr. Henry, "to discourage all attempts to dissolve a stone, supposed to consist of uric, and after it has attained considerable size in the bladder;" for long continued courses of alkaline remedies will only have the effect of precipitating upon the calculus, a coat of the earthy phosphates. Cases are given, in which large quantities of uric acid were voided with the urine; in one, each pint contained two ounces of brick-dust sediment; in another turpentine and opium, taken internally, always brought away an immense quantity of a similar sandy substance; by increasing as Dr. Henry supposes, the flow of urine, and thus cleaning out the tubuli uriniferi and the pelves of the kidneys. Many other useful observations are made respecting the different species of calculi.

The paper concludes by accounts of a case of stone, in which the larvæ of a coleopterous insect were voided alive with the urine; of one in which short hairs were discharged; of calculi from the lungs, consisting of phosphate of lime or of the triple phosphate; and of small crystals formed on the surface of cancerous preparation, kept in spirit of turpentine, which consisted of camphoric acid.

Case of a Periodical Affection of the Eyes and Chest, by
JOHN BOSTOCK, M.D. F.R.S. and L.S.

THIS is an interesting case in the author's own person, of a periodical inflammatory attack upon the eyes and membrane lining the nose, with subsequent affection of the mucous membrane of the bronchia. The complaint has come on, with greater or less violence, every year, in the month of June. Dr. Bostock further states, that he is affected "with various stomach complaints, probably connected with, or depending upon, a tendency to gout." His present age is 46 years. Almost all the articles of the materia medica seem to have been used for the relief of this complaint, but without "any distinct or permanent benefit." It is uncertain, from the account, whether any of these remedies were used as preventives as well as curatives. The patient's digestive organs are evidently and ha-

bitually deranged. Now this could not happen under a congenial diet and proper habits of life. Let this state of derangement be removed, (and a physician ought to have forbearance and perseverance enough to do that, although he may not be able to make his patients accomplish it,) and we prognosticate, that his constitution will no longer be predisposed to be thrown into a state of excitement in the month of June. We give medicine too much, and prescribe rules of diet too little. Our patients, it is true, are not yet philosophical enough to wait for such slow methods of cure; but let us be firm as well as philosophical, and like the ancients, we may teach them, that in all, but acute disease, health is to be kept, as well as regained, by constant attention to the old fashioned non-naturals, rather than by taking physic.

A case of Chronic Inflammation of the Larynx, in which Laryngotomy and Mercury were successfully employed : by MARSHALL HALL, M.D. of Nottingham.

WE willingly take this opportunity of applauding Dr. Marshall Hall for the ardour, the acuteness, and *the right direction* which he has brought to the investigation of disease; he may have made some mistakes in his desire to be accurate, but minuteness of diagnostic research is exactly the line which has ever, and will ever, lead, with the most certainty, to an improved knowledge of disease. The details of this case cannot be given, and the title sufficiently expresses its general circumstances. It was apparently an affection of the highest portion of the larynx, much above the rima glottidis; as is proved by the effectual opening into the larynx having been made through the thyroid cartilage, and by the power of coughing which the patient possessed; for the thyroid cartilages are above the rima glottidis, and Dr. Armstrong's cases of laryngitis, described in his last edition on fever, would lead us to suppose, that in inflammation of the rima glottidis, the patient is unable to cough. Although much that is good has lately been written on affections of the larynx, yet we are still in want of information as to the peculiar parts of the larynx, which are said to be affected in the several, and otherwise, somewhat inconsistent accounts of authors. In Dr. Armstrong's cases, the patients could not cough; in those of others, it is said to be hoarse and peculiar: these must refer to different affections, or to the same affections in different parts.

Observations upon the Morbid Appearances and Structure of Bones ; being the Sequel of a former paper, by JOHN HOWSHIP, Esq.*

MUCH credit is due to Mr. Howship, for his extensive and laborious investigations into the structure and formation of bone. In this part of his subject, he writes, "on enlargement from swelling of the original substance of bone," and first discusses the subject of spina ventosa. His pathology of this disease supposes, "that the natural secretions, in the early stages, form most commonly, the contents of the tumor." The first symptoms are said to arise from "a degree of excitement in circulation upon the fine secreting membranes, within the great channel or medullary cavity of a bone;" this excitement afterwards extends through the substance of the bone to the outside. Pressure is made by the swelling which takes place, and effusion occurs throughout the whole substance of the bone; the latter therefore readily gives way, and its structure thus becomes, as it were, unfolded. Suppuration afterwards takes place in some cases; but in others, the action is less violent, and the tumor "eventually attains (to) an enormous magnitude." The effused fluids are said to belong to scrofula, and are "principally injurious from the expansion they produce." The thickened membranes occasionally become cartilaginous and bony. Two good cases are given from Du Verney, and several preparations of diseased bones from Mr. Heaviside's museum, are described and illustrated by plates. The last half of the paper describes the "increased interstitial deposit of ossific matter," which occurs in ossific inflammation, and makes the bone more dense and compact than natural. Inflammation of bone may be distinguished by "very intense pain, and sense of heat in the affected part, not much aggravated by pressure, but connected with more or less excitement of the system," and by this, "occurring in a constitution, otherwise healthy." The bone increases in bulk and weight. The first excitement is of "the membranes lining the longitudinal canals or medullary cavities" of the bone. The membranes thicken, but no increased secretion takes place, and therefore the canals are only filled with the natural soft medullary matter, like those in healthy portions of the bone. The longitudinal canals now enlarge; the membranes then become granulated or tubercular, and the surface of the canals are found to be unhealthy and unequal. The bone swells, and "in addition to the abovementioned effects of absorption, a considerable deposit of ossific matter

* See Vol. viii. p. 143.

takes place." At this time, from the communication between the canals, "a line of irritation is propagated to some other part:" this part is often the outside of the bone; the bony matter is absorbed, and a fistulous opening is formed, leading, from the inflamed and suppurating part, to the surface of the bone. The tumor of bone which is occasioned by the new ossific deposit, remains permanent after the inflammation has declined. All these circumstances are illustrated by very fine engravings, from drawings by the author.

Case of Carotid Aneurism, by J. P. VINCENT, Esq. Surgeon to St. Bartholomen's Hospital.

THIS case terminated fatally on the 33d day. The operation was perfectly performed, and the ligature came away on the 21st day. Previous to this time, the patient was tolerably well, except that he constantly complained of uneasiness, and a sense of fulness in the abdomen; which immediately ceased on the coming away of the ligature, and was therefore, probably, produced by irritation of the par vagum, caused by the ligature. On the 32d day, a fungus protruded from the wound, and the neck swelled considerably. On the 33d day, deglutition became difficult, although the respiration was natural, and symptoms of fever had been present for some hours. In the evening, the patient grew much worse, the aneurismal tumor was opened, and pus was evacuated from it; but he died immediately afterwards. On dissection, the pus was found to have been produced by an inflammation of the artery; but the most remarkable circumstance was, that "globules of air were found adhering to the inner surface of the aorta and other large arteries; and in the head, air was found under the tunica arachnoides. Mr. Vincent surmises, that the air contained in the arteries caused death. This must be a mere surmise; no attempts were apparently made to discover what kind of gas it was, and may we not suppose, with equal probability, that the globules were thrown out after death, as during life?

On the Use of Arsenic in the Cure of Chorea, by Mr. SALTER, Surgeon, of Poole.

FOUR well marked cases of chorea are here related. They were all cured by a perseverance in the use of from 3 to 14 drops of liquor arsenicalis, three times a day, for one or two months. Purgatives are said to have previously failed. The cases were consecutive, and therefore, not chosen for the purpose; but no clue is given to the discovery of that difference

which, of course, existed between cases like these, and those which are cured by purgatives. Mr. Salter relates, that the bowels were kept laxative, apparently by the arsenic alone, as no other medicine was taken. No marked derangement of the digestive organs existed in these cases; otherwise the author would have mentioned the circumstance. This subject as well as most other medical subjects, wants more accurate examination; our recitals of cases would be much more instructive, if pains were taken to describe more accurately, the exact state of all the principal functions of the body in each case. Old observations become useless to persons taking new views of disease, from the want of the complete statement of the facts of the case. Let us therefore qualify ourselves, by attentive observation, to take a complete and philosophical view of the diseases which come under our care, and there are few of us who will not be able to add, very considerably, to the stock of medical knowledge.

On a new Method of Preparing Pharmaceutical Extracts,
by J. T. BARRY.

THIS is by evaporating them in vacuo. The vacuum is formed by displacing the air in an afterwards close vessel by means of steam, and then condensing the steam. Fluids in such vessels boil about the temperature of from 90° to 100° . The Editor has procured specimens of the extracts of Hemlock, Taraxacum, Rhubarb, Senna, Henbane, Sarsa, Belladonna, Colocynth and Poppy, from Mr. Barry, but has not yet used them in more than a few cases. The extract of rhubarb is a dry chrySTALLINE looking mass, which he has found much more efficacious than the common extract, and it cannot be doubted, that all extracts made at so low a temperature are preferable to such as are made even at the temperature of boiling water.

The work from which the preceding article has been taken, is published on the 18th of every month, in large octavo. Each number contains about 18 pages, closely printed, in double columns, and may be obtained at the moderate price of eight pence sterling a Number. Ed.

Case of Accident followed by Mortification. By S. D.
TOWNSEND, M.D.*

[Communicated for the New England Journal of Medicine and Surgery.]

Dec. 23, 1819. I. T. a seaman aged 20, was standing over the bow of a vessel approaching a wharf, and while endeavouring to keep her off was crushed between the latter and the vessel. Several of his ribs were fractured by this accident, commencing at the seventh, near its junction with the cartilage, one extremity of which projects about an inch; the ensiform cartilage of the sternum also appears to be much injured, and at each inspiration a large tumour forms at the lower part of the cavity of the thorax, nearly the size of the stomach. He was immediately bled, but as his circulation was languid, and his skin cold, not much blood was drawn; sulph. sod. $\mathfrak{z}\text{i}$ was afterwards administered.

24th. Passed the night comfortably without complaining, made several exertions to cough, and brought up blood mixed with mucus; when raised in bed the crepitus produced by the ends of the fractured ribs is distinctly felt at each inspiration. Complains much of the distress produced by the constant inclination to cough: breathing laborious, tongue very white, pulse full and tense; the salts have not operated. Vs. $\mathfrak{z}\text{xvii}$. and purgative cœnema, let him take immediately \mathfrak{R} jalap grs. xv. Sub. mur. hydr. grs. v. And apply a bandage to prevent as much as possible the action of the intercostal muscles.

25th. Had several copious evacuations yesterday; and suppression of urine in the evening, which however was relieved by warm fomentations. Abdomen not so tense, cough very troublesome, no appetite, pulse still full. Repeat VS. ad. $\mathfrak{z}\text{viij}$.

26th. Not much alteration from yesterday; feels relieved from his cough soon after each bleeding. VS. ad. $\mathfrak{z}\text{viij}$.

28th. Was attacked last evening with a severe paroxysm of pain in the chest, has had no discharge for several days, abdomen tumid, tongue rather dark, pulse still firm. \mathfrak{R} sulph. sod. $\mathfrak{z}\text{i}$. and VS. $\mathfrak{z}\text{iv}$.

30th. Had a very severe chill last night which distressed him exceedingly, it is attributed to his having suffered under this

* This communication was received too late for an earlier insertion in this Number.

complaint a short time previous to the accident, in a southern climate ; ordered tinct. opii. gtts. \mathbb{L} if it occurs again.

31st. Another chill yesterday afternoon : other symptoms the same.

Jan. 1, 1820. The chills were now accounted for, when on taking off the dressings this morning, the integuments covering the ribs, where the greatest injury was received, were found to have sloughed away ; serum mixed with blood gushed out in a full stream to the amount of \mathbb{L} . Two other openings into the thorax formed in the same manner, through which the serous discharge continued to flow ; mortification soon ensued, and he expired on the 9th of January, eighteen days after the accident.

Dissection. The mortification was very great, extending from the external opening to all the surrounding parts, the diaphragm, left lobe of the lungs, and mediastinum. The lung was covered with a thick coating of coagulable lymph, and the cavity of the thorax filled with a fluid resembling pus in colour, but of thinner consistency. The heart appeared healthy, but the pericardium was slightly sphacelous. The cartilage of the fourth rib was divided, as was also that of the sixth ; an occurrence usually prevented by its extreme elasticity, unless the force applied be very great. The ensiform cartilage was also considerably deranged. The opening into the thorax was so great that the inflation of the lungs during life was seen ; and probably, if the attempt had been made, the pulsation of the heart would have been perceptible.

Tremont Street, March 13, 1820.

TO CORRESPONDENTS.

Communications have been received from Drs. Allen and Thurston ; also Bills of Mortality for 1818, 1819, for Portsmouth. These, with those for the last four years for the town of Boston, will be published in the last Number of this volume.

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No. III.

Clinical Remarks. By JOHN W. WEBSTER, M.D.

[Communicated for the New-England Journal of Medicine, &c.]

Elephantiasis.

A CASE of this disease in a mild form having occurred to me, I send a sketch of the limb, together with some account of the case. D. J. female ætat. 32, married, has had children. The patient a large, robust woman, was born in Northampton, has never been out of the country, and for the last 14 years resided in Boston. About three years ago her left foot became painful and swelled; the enlargement gradually extended up the leg, by rest and cold applications, the swelling subsided; it soon came on again and has occasionally increased and diminished, but never entirely disappeared. Within a few months it has increased greatly; blisters have been applied with little benefit.

Feb. 22d, 1820. The swelling extends from the ankle to the knee, its circumference at the ankle is $15\frac{1}{2}$ inches, at the calf $19\frac{1}{2}$ inches, colour inclines to purple but indistinct, as she is a dark mulatto, in some places the skin is thin, reddish and shining, in others rough and scaly; the whole surface of the leg is lumpy and irregular; here and there crossed by deep wrinkles, on pressure it pits slightly; at present she complains of great pain extending to the groin, there are appearances of inflammation along the absorbents of the thigh; is unable to sleep on account of the pain, and the weight of the limb prevents her from moving; tongue coated and other symptoms of constitutional irritation, skin rather dry. She was ordered a purgative of the

Sub. M. of Mercury with Jalap, and an anodyne draught with antimonials at night.

Feb. 23. Had a better night, she was now put upon the use of diaphoretic medicines, was directed to have a warm bath every other night, to bathe the affected limb in salt water on the intermediate days, and a flannel bandage was applied as tight as she could bear without pain. This treatment was continued, and on the 1st of April, the limb was reduced to its natural size; there was no vestige of the disease and she has remained perfectly well *to this time*, May 12th.

Delirium Tremens.

CASE FIRST.

E. R. ætat. 27, had been for some years in the habit of taking large quantities of ardent spirits, she was admitted into the Alms-House in July, 1819; on my first visit to her she was walking about the room, singing for a few minutes, then suddenly crying out; on my asking her some questions she answered in a perfectly intelligible manner, I was informed by the nurse that she had been walking and singing during the whole night, and that no one had been able to persuade her to lie down; her pulse was quick, small, and without much strength; the tongue uncommonly clean but of a bright red, and dry in every part; eyes glaring and rolling in every direction, an emetic of Antimony and Ipecac. was directed. On my next visit some hours after, the emetic not having operated I directed a solution of Emetic Tartar to be given in doses of two grains every 15 minutes, till an effect should be produced on the stomach or bowels. This was done, and no symptoms of nausea appeared till she had swallowed *thirty-two* grains, when she began to spit up a thick mucus, I now ordered the medicine to be discontinued and a little warm water to be given; vomiting however did not take place, but a large quantity of mucus resembling the white of eggs was discharged without effort. The body became covered with a gentle moisture; leaving an opiate for my patient I had great hope of finding her relieved in the morning. The next day I was informed that she had remained quiet during the night, but sleepless; her extremities were now cold, her tongue had still the fiery redness, her eyes were glassy but wandering, she had had two copious alvine dejections. Camphor and opium were now directed in doses of two and three grains, to be repeated every two hours. No sleep was obtained, and on the following day I found the patient nearly as furious as ever; she died before night.

Dissection.

On examination of the body, the stomach was found thickly coated with a viscid mucus similar to that which had been expectorated; the intestines exceedingly thickened and contracted, the liver hard and coated, with adhesive matter. No morbid appearances were found within the cranium.

CASE SECOND.

Thos. C. ætat. 40, a strong muscular subject, was received into the Alms-House, in the early part of February last, labouring under Delirium Tremens. I found him in a state of furious delirium, throwing his arms about in every direction for some minutes, then suddenly making an effort to seize some real or imaginary object, he fell to the floor with violence, soon however, raising himself he crawled about the ward on his hands and knees muttering incoherently, and endeavouring to catch at objects before him. After observing his motions for some minutes, I told him to rise; he raised his head, stared wildly around, and soon resumed his former position; various questions addressed to him after this were entirely disregarded, and finally I was under the necessity of directing the attendants to remove him to a bed, he resisted with wonderful strength, and it was some time ere I could examine the state of his pulse, which I found full, frequent and hard. The skin was nearly of the natural temperature. Disposed from the good effects I had witnessed in some previous cases of less violence, to adopt the antimonial practice, I directed a solution of the tartrate of antimony in the proportion of three grains to an ounce of water. Two table spoonsfull were administered, after waiting fifteen minutes, the dose was repeated, no effect produced; two grains were now given every fifteen minutes until twenty grains had been swallowed. As there appeared no symptoms of nausea, I felt unwilling to continue the administration of the antimony, and commenced the exhibition of a solution of sulphate of Zinc. Thirty grains were taken in divided doses, and no nausea produced; during this time the patient more than once forced himself from the bed, and crawled about as before, shouting and raving whenever restrained. Having but little hope of exciting vomiting, and seeing still less prospect of my patients recovery, it occurred to me that the exhibition of antimony *per anum*, might produce an artificial cholera morbus, and afford some chance of recovery. I accordingly caused a solution of twenty grains of the tartrate of antimony

to be dissolved in a sufficient quantity of tepid water, this was injected into the rectum. In about 15 minutes the patient showed evident signs of nausea, the pulse became less full and frequent, and in 30 minutes a profuse perspiration appeared, he lay perfectly quiet and seemed disposed to sleep. I remained with him. In two hours one copious alvine evacuation took place, which was ere long succeeded by a second. Vomiting did not occur, and in three hours from the administration of the enema, I left my patient in an undisturbed sleep. On my visit early the next morning, he was sitting up in his bed eating his breakfast with perfect composure; he complained of no unpleasant symptoms, and in two days was discharged from the hospital cured. On inquiry I learnt that this man had been in a state of violent delirium for some days prior to his admission, and had taken very powerful and repeated doses of emetic substances without any effect.

CASE THIRD.

April 3d. Since the above case, another, very similar in point of severity, has occurred to me, in which the tincture of digitalis was administered, at the suggestion of a gentleman who had been told of the exhibition of it by Dr. Pierson of Salem, in cases which have lately been published by him, and I have great pleasure in stating that the most decided benefit resulted from this (to me, new) mode of treatment. Two doses of sixty drops each were given at an interval of six hours, the last which was given at about 7 P. M. shortly produced a very considerable degree of languor, the patient became more composed, the violence of his muscular efforts abated, and towards morning he fell asleep, after which he speedily recovered and was able to resume his ordinary pursuits.

May 1st. A second case has been cured by a similar plan of treatment.

Internal use of Nitrate of Silver.

Soon after the attention of physicians was called to the internal use of the Nitrate of Silver, I prescribed it in a variety of cases and especially in Phthisis Pulmonalis, the disease over which (from the statements of the gentleman who first employed it,) it appeared to exert the greatest influence; but regret that I am unable to entertain the same opinion of its efficacy in relieving this formidable disease. The only good effect which I have had reason to attribute to the Nitrate of Silver, was an allevia-

tion of the night sweats. The following case is selected from many, as that in which this medicine produced the most effect, and in which it was exhibited most extensively.

Martin Carrol, ætat 45, seaman, May 16th, 1819. Has had a severe cough, pain in the chest, head-ache, nausea and occasional vomiting, expectoration of much white frothy mucus, slightly streaked with blood, frequent chills, &c. for some months past, has been vesicated, bled, and is now under salivation. He was directed to take no more mercurial pills, measures were adopted for keeping his bowels soluble, and a mixture prescribed for his cough. The ptyalism having ceased after a few days, the symptoms continuing as before, I directed $\frac{1}{16}$ th of a grain of Nitrate of Silver combined with a small proportion of opium, to be given morning, noon, and night; no inconvenience being complained of by the patient, the pills were continued; on the fourth day an additional pill was taken, and in this manner the dose was daily augmented.

June 1st. The patient who had for some days been gaining strength very perceptibly, rose from his bed and walked to the fire-place. The night sweats were much diminished, and I began to entertain some hope of a recovery. The pills were continued, and in a few days the quantity of nitrate was increased to one grain in twenty-four hours. The cough became less urgent, the pain was not constant as had before been the case, and the appetite daily improved.

June 14th. The pills were discontinued, a light nourishing diet was strictly adhered to, and the cough mixture was the only medicine taken. Three days after, the night sweats increased, and on the 18th the patient begged to be allowed more of his pills; they were directed in doses of $\frac{1}{4}$ grain, and gradually increased.

July 14th. The disease does not seem to have advanced, he has been able to walk about the room, and sits up many hours daily. The expectoration is much less. Having increased the number of pills of $\frac{1}{4}$ grain, to six pills in the twenty-four hours, he complained for the *first* time since he took them of nausea, to ascertain whether the opium in the pills was the cause, the quantity of that article was diminished, the nausea however recurred, the number of pills was reduced to four in twenty-four hours, the nausea ceased.

July 22d. The patient was less able to walk, and complained of restlessness at night, a scruple of the cobweb in the form of pills was given at bed time, the night was passed quietly and with refreshing sleep. Having in other cases employed this remedy, it was repeated. The patient however now daily be-

came weaker. The medicines were continued but the disease advanced with rapid strides, and on the 30th October, death took place.

The web of the black spider which is found in cellars, stables and similar places, I was induced to exhibit in consequence of the high commendation bestowed upon it by Dr. Robert Jackson, and have in many cases witnessed the good effects of a remedy in too little use, (at least in this place.) In many painful affections, in the restlessness of fevers, the symptoms of irritation which are so frequently occurring in patients under a mercurial course for syphilis, and other diseases, in rheumatic head-ache, asthma, and chronic coughs, I have prescribed the cobweb with the most decided good effect. Twenty grains have been given daily for some time past to a female epileptic patient, where the medicines usually recommended, had been tried with no benefit, the only substance which has mitigated the violence of the disease, and prolonged the intervals of attack has been the cobweb. The cobweb is readily made into pills with a small quantity of mucilage, and the best mode of exhibiting it, I have found to be in five grain doses every half hour, but have not observed any more relief obtained by forty grains than from twenty; the only increased effect appears to be upon the intestinal canal. In one case (an old and infirm asthmatic) slight but pleasant delirium was produced, and from the report of the persons who slept in the room with him, the effect though of longer duration was very similar to that of a dose of nitrous oxide gas, the muscular energy having been exceedingly increased, the patient could not be confined to bed, but danced and jumped about the room, nearly all night, in the morning I found him quietly asleep, no unpleasant symptoms ensued. To irritable sores the cobweb has proved an highly beneficial application.

NOTE.—We add with great pleasure to the foregoing cases of delirium tremens, the following extracts translated from a letter from Dr. Albers of Bremen, to one of the editors. The deservedly high estimation in which Dr. Albers is held in Europe, gives to his opinions in medicine a very distinguished value, while the deep interest he has so long taken in the medical literature of our own country, has connected him intimately with those among us who are its best friends. ED.

Four cases of Delirium Tremens have come under Dr. Albers' professional care within the present year, and in all, the use of spiritous liquors was in the highest sense excessive; of these cases two were fatal, one in forty-eight hours after the attack. He had been twenty-four hours ill, says Dr. A. when I first saw him. He was continually deranged, not violently how-

ever, since on account of his entirely broken constitution, his strength was gone. I began with one grain of opium every two hours, but after twelve hours, his strength was so reduced he could take no more medicine. He remained in a quiet delirium twelve hours before he died.

Dissection. No trace of *meningitis*, or *encephalitis*.

Case 2d. A young man, aged 32, in whom the disease began as it very often does, accompanied with pleurisy, and on this account xx3 of blood were taken, and an antiphlogistic mixture ordered. About twelve hours after, the delirium became more violent, and I gave every two hours one grain, and then with the same interval a grain and a half of opium. After he had taken this medicine about twelve hours, he slept three hours, but when he awoke he lay with his eyes turned inwards, attempted to sing or cry out, which however on account of his momentarily diminishing strength he could not do, and thus he lay yet two hours longer, when he died, with violent rattling in the throat.

In this patient, dissection discovered no inflammation of the brain or its membranes.

Dr. Albers promises to continue his dissections, but fears they will give but little information, as according to his firm persuasion, the brain itself appears to be the principal suffering part, which in so many other diseases of this organ, he remarks, can undergo the most dreadful lesions or rather changes, without our being able to ascertain it, by the senses.

It is worthy of notice, he continues, in the mean time, that we find no inflammation, or consequences of inflammation, and this shows us, that antiphlogistic remedies are not universally the true ones; although I am fully persuaded that bloodletting, purging, &c. under circumstances, may be very proper, since I myself as well as many of my colleagues, have treated this disease in this way with success in very many cases. Much depends on its violence, and I think it certain that in many cases, it defies all remedies. To a third patient, with whom several years before, I had succeeded two or three times with *emetics*, I gave this time opium, and he recovered rapidly.

The fourth patient is an old turner, whom I have mentioned in my preface to the translation of Sutton, and to him I likewise gave opium; but I cannot tell exactly how much he took of this medicine, as he was running about the streets the greater part of the day and evening, and very often refused to take any thing. In this patient, the disease begins regularly as in many cases, with epilepsy, and the delirium first occurs, from twelve to twenty-four hours after. I still believe confidently that in regard to this disease, both in its pathology, and therapeutics, we have much to

learn, and that we are far from understanding it so thoroughly as many physicians believe.

Note. In Hufeland's Journal a case is communicated by J. F. Muller, on the successful application of tartarized antimony in the treatment of mania. Subject a lady, aged 45, previously healthy. The medicine given largely in aqueous solution, mingled with tea. Third dose induced vomiting of blackish-green matter, with marked relief; afterwards acted only on the bowels: cure rapid and permanent.

Dr. Rayer in a memoir on delirium tremens, proposes to substitute for the present name that of *enomania*, as more proper to characterize the species of mania resulting from abuse of strong liquors. *Bulletins of the Faculty of Medicine of Paris* 1819, No. VI.

In No. X. Dr. Rayer has published a case of delirium tremens successfully treated by opium.—ED.

Case of very serious injury of the Cranium and Brain. By J. THURSTON, M.D.

[Communicated for the New England Journal of Medicine and Surgery.]

AUGUST 14, 1819. I was sent for to visit a boy at Rye, about eight miles distant. He had the evening before fallen from a frame about fourteen feet high, upon a rock in the cellar, over which it was erected. I was informed by the medical gentleman, who was called at the time, that he had bled profusely, and that a portion of the cerebral substance had escaped. He had covered the injured part with lint, but declined any farther interference. The boy had lain comatose, but could be roused. The pulse was labouring and intermittent. On removing the dressings, the integuments over the left frontal bone were found very much swollen, forming a tumour, that extended over and closed the left eye. There were to be seen three small punctures about an inch distant from each other, the lowest of which was at the inferior part of the frontal bone, a little above where it contributes to the formation of the frontal sinus. There was an oozing of disorganized brain through the superior puncture. On examination by the probe, through the punctures, it was ascertained that portions of the cranium were driven in upon the brain, and the probe could be passed freely between some of the fractured portions. Not having with me the proper instruments for the operation, it was necessary that I should return home. I

visited him again in the afternoon, and proceeded to the operation, by making two incisions through the scalp, forming the letter V, the apex of which was at the inferior part of the frontal bone, and diverging so as to include the punctures, and extending from each other about two inches. This flap was then dissected from the cranium, and exposed an extent of injury hardly to have been expected from the examination, or from the condition of the boy. Two portions of the cranium of about an inch and a half in length were forced in upon the brain. It was necessary to remove two small angles of the cranium, in order to disengage them, which being done by means of Hey's saw, they were taken away with ease. The dura mater was found lacerated about half an inch in extent; the surface of the brain beneath appeared like a disorganized mass. On farther examination, a large depressed portion of cranium was discovered on the sagittal side of the opening, which was elevated; and another and smaller portion on the opposite side, near the lower angle, which was evidently fractured on all sides. But the attachments of the last portion were so considerable, and the opening already made so large, as to prevail over the apparent necessity for its removal. It was therefore elevated, and suffered to remain. The scalp was very much engorged with blood, and the edges of the wound could not be brought together. It was cleansed and dressed with dry lint, and the boy was put to bed, and soon fell asleep. The loss of blood during the operation was very considerable. The pulse became regular immediately after the operation. A cathartic was directed, and advice for such contingencies as might be expected, under the control of the gentleman who first saw him.

Aug. 22. Found him this morning with an intermitting pulse. Was informed that he lay most of the time drowsy, but very irritable when roused. The bowels had been moved once since the operation. There was but little discharge from the wound, and that thin, appearing like serum. The lacerated edges of the dura mater were sloughing. The integuments were much swollen, especially over the left eye, attended with considerable pain, and purulent discharge from the eye. The wound was dressed with lint, the edges being drawn together as nearly as possible with strips of adhesive plaster. A poultice was applied over the left eye, and a cathartic directed.

24. The pulse is still intermitting. There is an abundant discharge of purulent matter and the black portions of the dura mater, which had sloughed, were removed, and a small tumour appeared of about the size of a nutmeg. The swelling over the

forehead and eye had increased very considerably. The wound was dressed with lint, &c. as before.

27. The pulse still intermitting. On removing the dressings a tumour was observed protruding from the wound of about two-thirds the size of a hen's egg; its color was dark, being covered with coagulated blood. The discharge was profuse and extremely fetid; and the portion of bone, which had been elevated near the lower angle of the wound, had separated, and was embedded in the matter. Strong pulsations were visible in the tumour; synchronous with those in the wrist. The tumour over the eye had increased, and a large abscess formed, which was opened. The wound was dressed as usual and a cathartic directed. The boy had been for the two preceding nights restless and wandering.

29. The tumor did not appear to have increased much since I last saw him. It was somewhat flattened by the bandage. The discharge was profuse and extremely fetid. The pulse was regular, and the boy less irritable. On removing the bandage, he said, he felt as though the top of the head was coming off. The wound was covered with lint; and, on applying the bandage, which was done with a particular view to its pressure on the tumor, he cried out, "tighter, tighter." Directions were given to renew the application of the bandage daily, till I should hear from him.

Sept. 5. The tumor is nearly on a level with the external wound. Granulations are shooting up, and the whole appearance of the wound is healthy.

9. The wound is rapidly contracting its dimensions, and appears healthy. Some symptoms of irritation have appeared, owing probably to the lodgment of a quantity of pus under the cranium. By a slight degree of pressure with the probe it was discharged.

13. The tumor has entirely subsided, and a healthy granulating surface is all that is visible.

Nov. 20. The wound is healed over perfectly. But the brain has very little protection even from the common integuments. Pulsations are distinctly visible through its present covering. The lower edge of the flap was united while the upper edge was prevented from approximating its opposite by the tumor.

I regret very much, that it is not in my power to make a more particular report of this very interesting case. But the distance of the patient from me, precluded the possibility of my seeing him often, and marking its progress, as I would gladly have done. What I now send you is merely a transcript of a few notes made

to assist my own recollection, without any view to publication. Such as it is, it may have some little weight in forming an opinion, as to the proper mode of practice in cases, which, to this time, admit of great doubt.

Portsmouth, N.H.

Case of Paracentesis Thoracis. By Dr. LEMUEL W. BRIGGS.

[Communicated in a Letter to the Editors of the New England Journal of Medicine, &c.]

AFTER reading in the last number (page 149, Vol. IX.) of the New England Journal of Medicine and Surgery, a very interesting case of abscess in the lungs, cured by paracentesis thoracis, it brought to my recollection a somewhat similar case which fell under my observation; and although it did not terminate favourably, yet if you should deem it worthy a place, you are at liberty to make it public through that work.

Jan. 26th, 1817. I was called to visit a child of J. S. aged three years, of very slender constitution. The child had been sick a few days with the usual symptoms of pneumonia, viz. quick pulse, hurried respiration, cough, &c. After a few days, an erysipelatious eruption made its appearance on the whole surface of its body, which went off with a desquamation of the cuticle. The medicines made use of were calomel in small doses, together with antimonials, &c. The child appeared to be convalescent; the disagreeable symptoms, except some cough, having abated, with a return of appetite. In the course of ten days from this, I was called again. I found a recurrence of all the former symptoms, except the erysipelas, rather aggravated. Complains of the left side yet, and inclines to lie wholly on it. Countenance yellow, body emaciated, swelling of the extremities and abdomen. Complains of the cold, and has flushes in the cheeks in the afternoon. In addition to the above symptoms, she complains upon every attempt to move her, and her left side seems to be rather distorted when she stands erect on her feet.

March 12. I called Dr. Holmes in consultation. Upon examination, we found a fulness of the affected side, soft, elastic, and apparently a protrusion of something between the ribs.

13th. The protrusion was increased; we could now discover a fluctuation. Child's breathing continues very bad. She can only lie on the affected side.

14th. Not knowing whether it was an encysted tumor or empyema, yet knowing what would be the result if left to itself, having got the consent of the parents, we determined to open it,

which was done in the most prominent part, about one inch below the left nipple with a common lancet. There followed immediately a large stream of very foetid, yellow matter, and with so much violence as to dash against the side of the room, at the distance of five or six feet, accompanied with a gush of air as from the nose of a pair of bellows. The quantity of matter discharged at this time was judged to be between three and four pounds. When this abated the orifice was carefully closed with an adhesive plaster, on which was put a compress, and over that a tight bandage was passed round the chest. The child's breathing was immediately relieved, and her countenance which before bore the marks of extreme distress, now became calm and placid. She was placed in a recumbent posture, so as to favour the discharge which continued to issue from the orifice; and every time the bandage was removed, the air forced out at the orifice upon every expiration, with considerable noise and with a discharge of more or less of thin foetid matter. Her cough grew better, and considerable hopes were entertained that the child would recover; but in the course of a few days there would be a recurrence of the cough, at which time the matter, together with her breath, would pour out at the orifice in the side; and although it was kept closed, yet it never healed up. Gentle tonics were given, and she was freely indulged with such food as her appetite craved. Although she took considerable nourishment, yet she seemed gradually to fail. Very rapid pulse, flushes in the cheeks, swelling of the feet, marasmus, with all the symptoms of hectic, put a period to her life, about two months after the operation was performed.

I believe there can be no doubt but this child's life was prolonged for a considerable time by the operation; and I feel very confident, that, under more favourable circumstances, this case might have terminated in health. I do therefore cheerfully subscribe to Dr. Hawthorn's concluding observation, that "it is our duty, in every case where it is any wise practicable, to have recourse to the operation."

Bristol, R.I. May 18, 1820.

Effects of Datura Stramonium in Tic Douloureux. By DR. T. POMEROY.

[Communicated for the New England Journal of Medicine and Surgery.]

MR. I. called on me, about the first of September last, with a singular complaint in one of his knees. He stated that he had been injured in that knee, in May or June previous, by

the kick of a horse ; but he said that he had wholly recovered of that injury, long before. I examined the joint, but found no apparent disease of it, or of the leg.

The lameness was so great from it, that it was with the utmost difficulty he could walk. I remarked to him that I presumed the ligaments were hurt by the injury, and that he would recover from it shortly by the application of a little volatile liniment, which I gave him.

It was not probably more than twenty-four hours after, that I was called to visit him, and found him confined to his bed, and in great pain. The pain, at this time, was not confined to the knee, but was mostly in the calf of the leg, and so severe, that if he attempted to set up, it was almost beyond endurance. His appetite remained good, and he was free from fever. No local inflammation or swelling appeared, and the limb seemed to be sound and healthy in every respect.

From this time the pains began to increase and to wander through every part of the limb, from the hip to the end of the toes, and was often so excruciating, that the doleful cries of the patient might be heard many rods from the house. The points to which the pain was more particularly confined, were the ham, the calf of the leg, the heel, between the tarsal bones and the upper part of the thigh. Generally, however, in but one spot at a time.

The remedies which I made use of, a few days after my being called to my patient, had no effect, as to mitigating the severity of the disease. I employed freely epispastics, cathartics, and large doses of opium. Doses of opium from four to six grains at a time, did not alleviate his distress in the least ; nor, when often repeated, did they produce sleep. I also made a free use of the mineral solution, in such doses as to nauseate the stomach, but without any good effect.

I was led, from the commencement of the disease, to suspect that it was nervous in its nature ; and at an early stage of it, I was convinced that it was of that kind called *tic douloureux*. Our knowledge of all nervous diseases is extremely limited, and particularly of this, which is one, comparatively of recent date. There is no class of diseases so completely beyond the reach of medicine as that called nervous. And perhaps there is no one more distressing, and no one from which relief is more eagerly sought.

I had before seen cases of this kind of nervous affection, but never before in any other part than the face. Instances are stated of its attacking the arm and shoulder ; but I have never heard any of its attacking the ischiatic and great crural nerves of the leg.

Having used all other remedies that I could, with any confidence of success, I procured some of the extract of stramonium from the apothecaries, and gave pills of it, containing from half a grain to a grain in each, every hour. This had no sensible effect on him in any way. Of course, I was satisfied that the medicine itself could not be genuine, or had lost its strength. I then procured some of the stalks and leaves of the *datura stramonium*, and prepared an extract which I found to contain all the properties ascribed to the plant, in a wonderful degree. Of this I prepared pills containing three-fourths of a grain of the extract, and half a grain of tart. antimony, each. These I directed my patient to take every hour, till an effect was produced. Before the expiration of an hour, after taking the first, he was very sensibly affected; but the second was given him. Immediately after taking the second pill, all the characteristic effects of the operation of the medicine were observed in a high degree.

Almost total blindness ensued; great prostration of strength; vertigo; aridity of the mouth and fauces, together with vomiting and purging. These appearances continued from six to twelve hours. From the moment the medicine began to operate on him, his pain left him, and he soon recovered his health and strength. The disorder had then been on him about three weeks, in the greatest severity, and about three months in a more moderate degree. The blindness of the patient was so complete that he called for a candle in the middle of the day. To every appearance, this obstinate and almost incurable disease was removed entirely by only two of these pills; for he has never had a return of it since; and six months have already expired since taking the medicine.

Would not this medicine have a salutary effect in hydrophobia and tetanus, if given in such quantities as to produce an immediate and great change in the system?

Cooperstown, N.Y. March 20, 1820.

Note.—We add to the above, the following interesting case, from the *Bulletins of the Faculty of Medicine of Paris*, 1819. No. IX. ED.

Remarkable Effects of a small Dose of Extract of Stramonium in Intense Headach. By Mr. Orfila.—The subject of this affection was a lady, aged thirty. The pain so intense as to destroy sleep, and disqualify her for all occupation; observed periods of three or four hours, with intermissions of from twenty to forty minutes. The digestion was somewhat deranged; the other functions natural. Local and general blood-letting, antimonials, and cinchona, had been tried in vain. One grain of extract of

stramonium was given every morning for four successive days. No relief following, the dose was doubled on the fifth, and in four hours after, all the symptoms of poisoning by stramonium were developed. The face was of a purple red colour, and swollen; eyes projecting, pupil dilated; eye-lids half closed, and vision nearly lost; hearing impaired; muscles of the lower jaw, lips, right arm, and leg, convulsed; left side completely paralyzed, and intellect singularly disturbed; continual incoherent stammering, weeping, and other expressions of dreadful suffering; deglutition difficult; abdomen sore; pulse small and frequent; respiration tight and hurried; temperature natural; cold sweats only in the paralysed foot. Ten leeches were applied behind the ears; sinapisms to the feet; injections of common salt and vinegar administered; and vinegar and water given internally. An emetic was not prescribed; the symptoms, indicative of absorption, proving that the poison was no longer in the intestinal canal. The phenomena now gradually subsided, and the paralysed limb began to execute slight movements. About midnight another, but less violent attack, relieved by antispasmodics. Weakness and indistinct articulation only remained; and the headach never recurred. In nine days the patient was perfectly restored. The violent operation of the stramonium is, in this instance, referred by Orfila to some peculiarity of constitution in the patient; since it may commonly be administered without inconvenience, in a dose double that which produced the violent effects described here. The case occurred in Minorca; and most of the poisonous plants, Orfila observes, possess greater energy in this and similar situations than in more northern latitudes. And, again, the inhabitants of the south are endued with a peculiar susceptibility, which renders them more sensible to the action of powerful medicines. However it be, the fact of a general and very intense headach having been speedily removed by the stramonium, is worthy of record.

Observations on Hernia and Fungus Cerebri. By Dr. JONATHAN A. ALLEN, in Reply to Dr. JAMES SPAULDING.

[Communicated for the New England Journal of Medicine and Surgery.]

HAD Dr. Spaulding in his communication, published in the last number of this Journal, confined his remarks to hernia cerebri, or to the phenomena of those tumors or protrusions, which occasionally occur after injuries of the head, the subsequent observations would not have been required. He would

have had my most cordial thanks for the correction of an erroneous opinion I had drawn from his letter. But as his train of reasoning, and his accusation of my having quoted the case related by Du Quesnay, incorrectly, have a tendency to dissuade from that practice recommended in my communication, published in the eighth volume of this Journal, a few remarks appear to be demanded.

Dr. Spaulding assigns as a reason for communicating his case of *hernia cerebri*, that I stated in confirmation of my practice, that he "extirpated a tumor of this description," &c. I am sorry Dr. Spaulding had not said, "*cut off a tumor*," which would have been consistent, both with what I stated and his letter, in which he says he removed it by "excision," and not, as in his communication, by "*being daily pared off*." There is a manifest difference between extirpation and excision. By extirpation we remove a wen, and by excision a pendulous fungus, or parasitical tumor.

Dr. Spaulding continues, "this kind of accident (if it may be so called) is much more properly termed *hernia* than *fungus*. If the parietes of the abdomen should be broken, and a portion of the viscera protrude, it would not be called a *fungus*. Then why is this term applied to every protrusion of the brain? Is it because this organ, in its colour and texture, somewhat resembles *proud flesh*?" Indeed it is extremely doubtful for what purpose Dr. Spaulding introduces this inquiry. It cannot be to support the just claim his case had to the appellation of *hernia*, because none had questioned its propriety. Neither does it appear probable that he designed it as an objection to any part of my communication, because I had there acknowledged that the opinion of Abernethy and Dr. Dorsey was probably correct, in respect to the production of some of those tumors. The former, thought extravasated blood pushes out the brain, and the latter mentioned two cases in which pus was found on dissection. I also assented to the opinion of C. Bell, that probably two other kinds of tumors sometimes arose; the one, an organized fungus from the dura mater; the other, a properly organized fungus from the brain. Admitting these opinions to be just, it appears that this affection admits of four varieties, two of which are correctly denominated *hernia*, and two *fungi*. And if the opinion of Dr. Spaulding be true, that "the most frequent cause is an over distension of the vessels, whereby the brain becomes swollen and bursts out," we have another variety of *hernia*. These distinctions seem to be founded in the nature of the complaint, and appear to be highly necessary to be observed to enable the surgeon, judiciously, to manage those cases. For instance, if the brain

protrude from inflammation, a very different mode of treatment would be required from that which would be proper, if pus or coagulated blood "pushed it out." A fungus arising either from the brain, the dura mater, or the integuments, all will allow, requires a different treatment from either variety of hernia.

The propriety of removing by excision a fungus cerebri, I am not insensible, has been condemned by gentlemen of high standing without discrimination. The two greatest objections to it are the dangerous hemorrhage, and the sudden reproduction of the fungus. These objections are weighty, indeed, and demand a thorough examination. The brain when injured in a sound state, is not found to bleed much, unless some important blood-vessel be injured. Then why will a healthy part of the brain be more subject to hemorrhage when a fungus excrescence is removed? In other parts of the body fungi are found to bleed copiously, and to increase in size rapidly, if they are partially removed, but if they be completely taken away no flow of blood is produced, and an immediate cicatrization is the happy event. Why then should not the same effect be expected from the removal of fungi of the brain? Has not a partial removal of fungi been the cause of the so general failure whenever the operation has been resorted to? Would not a more bold removal of the diseased part convert a vitiated granulation into a simple wound, which probably would heal in *due season*? Dr. Spaulding acknowledges, that "it is proper to extirpate tumors and *funguses* of the brain."

"The case mentioned by Du Quesnay as stated by S. Cooper," says Dr. Spaulding, "is not correctly quoted by Dr. Allen. He says the patient tore off the tumor and recovered, when it should be, tore off the coagulum and the cavity filled up." With due deference to Dr. Spaulding, I beg leave to observe, that his statement of the fact is incorrect, both in language and in the idea conveyed. It should have been, *tore off the coagulum, and the cavity healed up*. And if so, with propriety it may be inferred that the patient recovered, but if the expression "filled up" be used, it renders it doubtful whether it were with sound flesh or fungus, consequently uncertain whether he recovered.

Probably, Dr. Spaulding may object and say, that coagulum does not mean "a tumor," but only coagulated blood. It is to be presumed neither Cooper nor Du Quesnay are to be taxed with recording a circumstance so trivial as this would render it. The most reasonable conclusion is, that it was a coagulum which had assumed the character of an organized tumor in the manner Mr. Abernethy supposes tumors to be formed; consequently, it was an organized fungus having external appearances like coag-

ulum; and its complete removal gave the brain a chance "to heal up." It is therefore with propriety introduced to corroborate the testimony in favour of removing *fungi cerebri* by excision.

I ought in justice to apologize to Dr. Spaulding for introducing his case and name into my communication on *fungus cerebri*, as it was done without his permission. With the publication of the within, I sincerely hope the controversy will close.

Brattleborough, Vt. Feb. 26, 1820.

Collections in Morbid Anatomy. By JOHN WARE, M.D.

[Communicated for the New-England Journal of Medicine, &c.]

OCTOBER 2, 1819. M. J. W. æt. 9. She had been sick some weeks at the time I saw her, but had not been the subject of regular medical treatment. Her complaint had evidently been pulmonary from the beginning. She was suffering from a severe, frequent, and hard cough, with little, or no expectoration; her breathing was very short, and distressed—there was excessive anxiety about the lungs—and she was subject to a species of distress there, which she could not explain, and which only occurred at times. Her pulse were 140 in a minute and sometimes more—very weak, but regular. She had regular paroxysms of fever and profuse night sweats. Her tongue was only slightly furred and her appetite had not failed till within a few days. Her bowels were open, but the discharges dark coloured. She retained sufficient strength to set up a considerable part of each day. She took digitalis, an emetic and several purgatives, was blistered and appeared very much better; her pulse were reduced from 140 to 60 and 70 beats in the minute, and continued at this rate till the time of her death. She soon ceased to improve, and some new symptoms were developed which seemed to proceed from an affection of the heart. Its pulsations were performed with great force and produced a heavy, audible thumping. Her distress soon became horrible and was indescribable; she represented the sensation as if of a snapping or twitching in the heart, and sometimes of cramp. The least motion added to her torment. She lingered in this way for a few days, her pulse becoming very irregular, but not more rapid before her death, which took place on the 15th. I examined her body six hours after death.

The lungs on the left side were very much diseased; on their surface were many exudations of coagulated lymph, which had not become perfectly organized. The whole mass was highly

inflamed and appeared to have been so for some time. There were interspersed little spots of incipient suppuration, and there was one small collection of thick and almost caseous pus. The pericardium towards the left side, was inflamed both on its internal and external surface, and so likewise was the upper surface of the diaphragm—this inflammation was slight, and to appearance recent. There was no uncommon quantity of water in the pericardium, and about two great spoonsful in the cavity of the thorax. There were tubercles in the lungs of both sides.

Feb. 21, 1819. J. R. æt. 10 weeks. Has had for several days occasional attacks of severe pain in the bowels, accompanied by green and slimy discharges. When called to him he had been in violent pain for some time, evidently seated in the abdomen, without any tenderness on pressure. He took Tr. Opii. Camph. in the chalk mixture, at intervals, till the distress ceased and then a dose of castor oil. Soon after taking the oil, the child began to breathe with difficulty, mucus collected with rapidity in the lungs and he died in about six hours.

At an examination thirty-six hours after death, I found the stomach healthy, containing only medicine and mucus. The small intestines were perfectly healthy in their appearance through nearly their whole length, but in two places amounting in the whole to three feet, they were so much contracted as to have probably been during life completely impervious. This contraction I presumed to have taken place from spasm which had not been overcome by the effects of the opium. There was nothing like intussusceptio, a considerable part of the colon was in the same contracted state with the small intestines—and the whole of the bowels were much distended with wind.

S. E. aged 31. She had been troubled for some years with chronic complaints of the abdomen, for which I had previously attended her. On May 11th, 1820 she applied to me, and complained that she had been vomiting and had pains in her bowels; her symptoms however, were not at all worse than I had before seen them. She took gr. xij. of the Pil Aloes and Colocynth with gr. viij. of Calomel, a medicine which I had frequently given her. This did not operate as a purgative, and therefore probably exasperated the vomiting, which I was informed continued till the next morning. I then found her to my astonishment apparently dying—her extremities cold and livid, respiration laborious—pulse very rapid and weak. She complained of a violent pain in the left side, which darted across her bowels and was much aggravated by every respiration. A blister was applied to the side and stimulants given internally. She grew easier towards night and became warm; but gradually fell into a

stupid state, was bathed in a profuse sweat and died during the next forenoon.

Twenty-four hours after death she was examined. Her stomach and small intestines were found affected with a severe inflammation of the peritoneal coat. The omentum was connected with the uterus by very strong adhesions. The ovaria were both diseased, considerably enlarged—and of a depraved texture. There were, on that of the right side, several small vesicles filled with water which appeared as if they might be the commencement of an encysted dropsy of the ovarium. Between the womb and bladder was a cavity containing a small quantity of puriform fluid.

L. N. æt. 56. Complained of a great dizziness and an occasional headache; her eyes and skin were of a sallow or tawny yellow, her tongue slightly furred, appetite irregular, sometimes very craving; but she was unable to retain food upon her stomach. There was pain, soreness, and swelling across the epigastric region—her bowels costive and flatulent. She had a discharge of blood from the vagina which had continued three or four months, without pain, swelling or soreness, and was attributed to some blow or fall. Her pulse were very weak and varied in frequency from 90 to 120 through the whole course of her disease. The symptoms affecting the head and stomach were relieved, she recovered her appetite in some measure, but her strength regularly failed. The discharge from the vagina became less in quantity, but changed to a purulent character and was very offensive. Her reason began at length to leave her, and she gradually sunk away in a low muttering delirium.

On examining the body there were marks of former extensive inflammation in the liver, but no recent disease. The intestines had some slight marks of inflammation, but the uterus was the principal seat of disease. It was enlarged to nearly the size of an ostrich egg, and its natural structure was entirely destroyed—being changed into a hard knotty texture which had in many parts passed into the suppurating stage, so that the walls of the uterus had become of the consistence and appearance of putrefied flesh. The mucous membrane where it could be distinctly traced was much thickened, porous and ulcerated. Between the central part of the fundus of the uterus and a portion of small intestine, was an abscess which contained a great spoonful of pure pus—and a little to the right between the uterus and rectum, was a large cavity which contained nearly a gill of a thin, glairy, albuminous fluid without any characteristic of pus. On each side of the uterus near the Fallopian tube, was a tumour as large as a pigeons egg, adhering to it, of a firm cartilagi-

nous structure, with white streaks or bands passing through it in several directions.

Oct. 26, 1819. E. H. an unmarried female aged 63. She had been out of health for several months, was affected with pains about the epigastrium, and derangement of the stomach and bowels. She has now severe pain in the epigastric and right hypochondriac regions, her appetite has failed, her tongue is furred—her eyes and skin are very yellow and her urine of a very dark brown. Pulse above an hundred. Medical treatment produced little good effect. The pain was relieved, the yellowness of the eyes and skin went off and her pulse were reduced to the natural standard—but her appetite and strength continued to fail, she was unable to set up without dizziness and fainting, her urine was unaltered and her stools of a dark greenish appearance. Towards the latter end of her life she became affected by a constant sickness at the stomach, which was not even relieved by emetics; she finally sunk into a stupid state and died, Dec. 27th.

The body was examined thirty-six hours after death. The fat between the skin and muscles of the abdomen was uncommonly thick; the muscles themselves were thin and wasted. The intestines likewise were much loaded with fat. They had some marks of inflammation about them, but not to any extent. The gall bladder was the principal seat of disease. It contained gall stones of a large size which had produced inflammation, adhesion of the coats to the neighbouring parts, and ulceration to such an extent that the cyst was almost completely destroyed. The disease continued down the duct, and had affected a considerable portion of the duodenum and part of the pancreas. The stomach was nearly empty containing only a moderate quantity of a thick ropy mucus—the mucous membrane was rather paler than usual. The spleen was small and shrunk. Six stones were taken out. Five from the gall bladder; and one from the ductus communis, which weighed 13 grains and was $\frac{4}{10}$ of an inch in diameter. The weight of the five largest taken together was 71 grains, and their weights severally were 3, 5, 11, 13 and 39 grains—the last of which was $\frac{2}{3}$ of an inch in diameter. The liver was somewhat hard and full but not diseased and appeared to have continued to secrete perfectly good bile.

J. S. had been afflicted for a year or two with pains in the stomach which seldom left her entirely, but were occasionally very much exasperated: she frequently rejected her food and was subject to considerable disorder of the primæ viæ. Her symptoms were relieved by purging, blistering and opiates. In Sept. 1819, she was taken with a vomiting of blood and brought up immense quantities in a very short time. She past likewise

a good deal by stool. The vomiting returned once or twice; but in a few days she went into a comatose state and died.

Her body was examined twenty-four hours after death. The stomach was full of clotted blood; its internal surface somewhat inflamed. In the cardiac portion was a scirrhus ulcer of the size of a half dollar. The ulceration had extended so as to destroy the coats of the vein accompanying the gastroepiploic artery from which the hemorrhage had proceeded. The pancreas was in a scirrhus state, considerably enlarged, and when cut into was found of a hard almost gristly consistence.

D. W. aged 56. Nov. 1818. Applied to me on account of an aneurismal tumour which he had had about three years. It came on in consequence—as he thought—of some great exertions in rowing, when he experienced a sensation as of something giving way about his shoulder. The tumour projected at the spot where the pulsation of the subclavian artery may be felt beneath the clavicle. It was about the size of a pullet's egg. He lived a year and a quarter from this time. He had been intemperate—but by leaving off the use of spiritous liquors—losing blood occasionally—living on a low diet, and employing such other remedies as were indicated from time to time—his life for the last year was more comfortable than it had been. He died very slowly and with a good deal of suffering. His body was examined. The whole arch of the aorta—principally on its anterior surface, was the seat of disease. Its diameter was nearly three inches. There was no rupture of the tumour and no hemorrhage. The second and third ribs had been absorbed and pushed out of place to make room for the extension of the tumour—the absorbed surfaces were ragged, rough and full of sharp spiculæ of bone. The external tumour was inclosed by a membrane of a new formation which stretched across from one edge to the other of the absorbed ribs, so that there was a real deficiency in the coats of the artery at this part. The projecting tumour was filled by layers of coagulated blood, which probably contributed to protect it from rupture. The aorta was strong and healthy with the exception of this deficiency. There was however an extensive deposition of bone, which almost completely lined the artery, but did not extend to the heart or any of the valves. There was a good deal of water in the chest.

Case of Fistula of the Parotid Duct.

J. F. He gave me the following account of the origin of his disease. The first molaris of the upper jaw had become much decayed and painful—in an attempt to extract it the crown had

been broken off. Inflammation and swelling ensued, and matter made its way through the cheek in the course of the parotid duct. The saliva was then discharged through the same opening at every meal in considerable quantities. Several times adhesion took place so as to prevent this discharge, but the consequence was a great swelling in the seat of the parotid gland and considerable pain. By passing a probe along the course of the fistula it might be pushed against the bones of the upper jaw, but without entering into the cavity of the mouth. This led me to examine into the state of the fangs of the tooth which had been broken off. I found them extremely tender, ulcerated and discharging matter. After extracting one of them and passing up a probe into the socket—the probe which had been passed in from the cheek might be distinctly felt. I now extracted the remaining two fangs and suffered the parts to take their own course. The discharge of saliva immediately ceased, the opening closed, and the patient has had no farther difficulty although a year and a half has now elapsed since the fangs of the tooth were extracted.

Boston, May 1820.

Cases of Venereal Diseases, treated without Mercury. By S. PHINNEY, M.D.*

[Communicated for the New-England Journal of Medicine, &c.]

J. S. Consulted me May 28th, on account of several small ulcers on the prepuce, near its termination in the glans. He stated that in fifteen days after connexion he perceived three or four small sores, which were painful. On examination, I found as he had stated, four painful sores, they were well circumscribed, and terminated abruptly in the surrounding parts. As these sores wanted the characters of venereal chancres, I wished to try the effects of mild applications, and watch their course. Lime water and the Sub. Mur. Mercury, were given him as a lotion, and ointment of the Ox. Zinc. Imp. at the same time to be applied. In a few days I could perceive an amendment in the sores. The same applications were to be continued.

June 3d. Two of the sores have skinned over, and the others doing well. I gave him a Solut. Sulph. Zinc. in lieu of lime water, and the same ointment to be continued.

* The following cases occurred to the writer during his residence in a southern state.

June 10th. Since the last date he has committed some imprudences, which have materially altered the appearance and state of the sores for the worse. Two more have made their appearance, inflammation has extended around them for some distance, and they are spreading forward on the glans, secrete a thin watery fluid, and are very painful. I now added to the Sulph. Zinc. a portion of the Tinct. Opii. with directions to keep very quiet.

June 12th. No material alteration in the sores, though less painful, some swelling of the prepuce. To continue the same applications as before.

June 15th. No material alteration of the sores. They do not spread or extend deeper into the parts. Being very uneasy from a suspicion of labouring under the Venereal disease, and not finding any amendment of his condition as he supposed, he wished to consult another physician. I again repeated to him my impression as to the nature of his disease, and could not feel myself warranted in giving him mercury. His constitution was a very irritable one, and I knew he would not be disposed to submit to the prudential measures which a mercurial course would require, and which I felt persuaded would be merely experimental. He left me and consulted another physician, who had no hesitation in pronouncing the disease syphilis, and prescribed for him accordingly. He also touched the sores with caustic, this brought on severe pain and a very irritable state of the prepuce, a swelling of the penis, with phymosis. He was now confined to his bed. In a short time a swelling took place in the groin. In a few days soreness of the mouth came on, which rather increased his sufferings from the irritation it induced in the system. Suppuration soon commenced in the groin, and was opened, and although mercury had very evidently affected the system, no amendment had taken place in the state of the ulcers. His health began to suffer much, it was now thought best to suspend the use of mercury altogether, for a time, that his health might recover a little. As the effects of mercury which had occasioned so much irritation in the system began to subside, an evident amendment took place in the local affection, and the mildest dressings were found sufficient for a cure. I think it evident that mercury in the above case, was unnecessarily given. I infer this from the fact, that before any was exhibited two of the sores skinned over, and remained sound during the existence of the others. In venereal chancres it is seldom found that after their first appearance, others occur, as was the case in the present instance. Swelling and consequent suppuration in the glands of

the groin is no proof that they were such, this undoubtedly arose from the irritation of the caustic.

J. B. consulted me about the same time on account of several ulcers on the penis. He stated, that in six or eight days after connexion he discovered four small sores, which gave him little trouble; I found on examination, as he stated, four small sores on the prepuce near its termination in the glans. They were such as scarcely left a doubt on my mind as to their being venereal chancres, and I should have treated them as such, had he not declined the use of mercury, rather wishing to omit it for a few days and try some other applications: a solution of Sulph. Cupri. was given him, and some simple ointment to be used. I saw him again in a few days and could perceive that skinning had commenced around them. He was directed to continue the use of the same remedies. Nothing more was found requisite for a cure, which took place in about six or eight days. I might relate several cases which came under my care about the same time, similar to the one last named, but as nothing peculiar was required in the treatment of them, they all healing without mercury. I think it unnecessary. The following may perhaps be regarded as more important.

June 15th. Several patients came under my care about this time. One with sores on the glans penis, and one with sores and gonorrhœa; and one with gonorrhœa only. The period of their having sexual intercourse, I was very particular to ascertain, having some previous knowledge of their situation, and on inquiry, found they all had connexion with the same female, within forty-eight hours of each other, and although some of the sores had the appearance of venereal chancres, I gave them mild dressings only, and observed their progress. As they did not increase I continued the use of mild local applications, and gave the ordinary injections to those with running from the urethra. They all eventually recovered without the use of mercury, except what entered into the lime-water wash above mentioned. Respecting the time of the appearance of the disease in those cases, I may remark that in two, the sores made their appearance in about five days, in one, not until the expiration of three weeks. Those with running, in about ten days from the time of cohabitation. Some of the sores appeared on the glans penis, some on the prepuce, and one on the dorsum of the penis.

July. I was consulted by a female, on account of a sore on the organs of generation, and a running. She stated that some time before she suffered from a soreness which troubled her while walking, and a pain and heat in passing her water. That sometime since she had had connexion with one of the pa-

tients alluded to above. On examination I found a sore much larger than the thumb nail, on the under surface of the labia pudendi, not much deeper than the skin, but very red for some distance around and painful. Relying with confidence on what was related to me, and ascertaining the time of attack, which was soon after the above cases came under my care, I directed a solut. sulph. zinc. and a portion of tinct. opii. combined: and some mild ointment to be applied to the sore, and the common injections to be used, at the same time, to keep the bowels open with the sulphas sodæ. The sore was some time in getting well, but the running soon ceased; no mercury was exhibited; and she remained well when I last saw her which was in November following.

N. B., wished for my advice on account of several sores on the penis. He stated that about six weeks before he had been exposed to the disease, that in ten or fifteen days after, several small sores appeared, but did not give him much trouble, as they did not spread much or grow deeper. He consulted a physician, who considered them to be venereal chancres, and gave him pills of the sub muriate of mercury, &c. Some time after his gums became sore, but he could not perceive any amendment of the sores. He continued the use of mercury for some time longer, but not finding any amendment, he consulted another physician whose opinion coincided with the first, both as it respected the nature of the disease, and the mode of treatment. Another week passed, the sores were rather worse. They now began to spread forward on the glans; mouth became quite sore, some time more passed and no amendment. He now requested my opinion. Relying with confidence on what was related to me, and as the sores evidently appeared to be aggravated rather than getting better under the mode of treatment which had been adopted, I wished to try the effects of mild local applications, and relinquish the use of mercury altogether. In a short time as the effects of the mercury began to subside, the sores took on a very different appearance. They soon began to skin over, and in three weeks from the time of his consulting me, he was considered well. About six weeks after several small superficial sores appeared on the prepuce, near its termination in the glans. These were soon healed by the use of a solut. sulph. zinc. And he continued well to the first of December, when I last saw him.

About the same time I was requested to visit a gentleman in the country. The history he gave was the following: about three weeks after having sexual intercourse he perceived three small ulcers, they did not spread much, but became deeper, and

were very painful. He now consulted a physician who considered them venereal chancres, and gave him a medicine, of which he was to make frequent applications to the sores. This soon brought on severe pain and swelling of the whole penis with phymosis. At this time I saw him. I was unable to retract the prepuce, and could not of course ascertain the nature of the disease, therefore directed him to inject a weak solution of opium under the prepuce, and occasionally warm milk and water, to keep the penis constantly wet with acetite of lead dissolved in vinegar. Pain soon after considerably abated, but the swelling continued for some time; another week passed, and I was able to denude the glans. I found four ulcers on the prepuce near its termination in the glans of rather an oval form, not surrounded by any hardness and terminating abruptly in the cellular substance, and the appearance of granulations forming. He was directed to make use of the ung. ox. zinc. imp. and a solution of the sulph. zinc. He soon recovered under this treatment, and without the use of mercury. I heard nothing more from this patient for about two months, when he again sent for me, on account of an eruption which had made its appearance very suddenly over the whole body. It was of a copper colour, resembling very strikingly such as appear in syphilis. I gave him such medicines as would tend to keep the bowels open, with directions to be very particular in his diet, &c. The eruption soon disappeared except in the palms of the hands and soles of the feet, which were painful, and a roughness of the skin not unfrequent in herpetic eruptions.

I had frequent opportunities of witnessing the injurious effects of mercury given for supposed syphilis, when in fact it was a disease not of a specific character, nor demanding a specific treatment for its cure. The most shocking effects of this medicine I had an opportunity of witnessing in a young married woman. She had a sore in the organs of generation which, (from reasons which will be presently given) to my apprehension were not venereal, but were treated as such, by others. Swelling and suppuration in the groin soon took place. She was salivated. The swelling broke and the ulcer soon spread to the size of the palm of the hand. Inflammation extended to a considerable distance beyond it in the direction of the pubis and abdomen; sloughing ensued, she became delirious, mortification took place extending down the thigh, and to the parietes of the abdomen, which soon put an end to her sufferings. The husband of this woman a short time before came under my care for two sores on the prepuce, and a swelling in the groin. On examining carefully into the appearance of the

sores, I could perceive they had begun to fill up with granulations and looked healthy. He declared to me he had taken no medicine for them, and as they were apparently getting better, I merely gave him some mild ointment to be applied to them. The irritable state of the sores when he first perceived them, soon brought on a swelling in the groin, and matter could be evidently felt under the skin. I gave him a blistering plaster to be put over the whole tumor, with an intention of exciting if possible the absorbents to take up the matter, and avoid its discharging, this had the desired effect. He got well without the use of mercury, and remained so for several months, when I last saw him.

Barnstable, 19th May, 1819.

Case of Poison by Arsenic. By Dr. BENJAMIN PAGE, Jr.

[Communicated for the New England Journal of Medicine and Surgery]

I WAS called on Saturday evening, 13th of May last, to visit Mrs. Gilman, who became suddenly ill after tea; three cups is her usual quantity, but this evening it tasted so disagreeably she took but two. I saw her about fifteen minutes after she had swallowed the last cup.

She complained of a burning sensation in the stomach, griping pain in the bowels, trembling and numbness of the limbs, dizziness and confusion of the head, tingling pains in the eyes and face, dryness of the tongue and fauces, sudden flushings of heat. She had had one dejection before my arrival.

Gave ipecac. gr. xx. sulph. cup. gr. vi. which produced two speedy evacuations. Fifteen minutes afterwards she took tart. antim. gr. v. ipecac. gr. x. which was followed by two more ejections. After waiting fifteen or twenty minutes longer, sulph. zinci gr. xji. were taken and operated powerfully. Large and repeated draughts of warm water were given during the operation of the emetics. She was ordered to drink lean broth, and very freely of warm milk and water, with honey, in which was dissolved some carbonate of potass.

14th. Symptoms as yesterday with a little abatement of the burning in the stomach. Pulse quick and irregular; complains of lancinating pains in the head and breasts—dysuria, and tenesmus—bowels open.

Ordered barley water and gum-arabic broth, and clear milk with honey to be taken liberally.

15th. Passed a quiet night but without much sleep—had a rigor this morning and another in the evening; head hot, tongue thickly coated white; heat, soreness and swelling of the throat; difficult deglutition—face bloated and about the color of mahogany—the peculiar tingling sensation remains in and below the eyes.

Ordered olei. ricini. ʒj. the forehead and temples to be bathed with cold water, continue the mucilaginous drinks—tinct. opii. camph. ʒiss. at night.

16th. All symptoms rather milder except the heat and pain in the bowels, for which an injection of a pint of barley water with gum arabic was ordered. Olei Ricini. ʒj. to be taken soon after, and tinct. opii. camph. ʒiss. at night. Continue the medicines as before, with the addition of white soap boiled in water.

17th. Better. Purple spots on the body and arms, complains occasionally of faintness, and a prickly sensation in the skin—numbness and pain in the left arm and elbow, soreness and pungent pains about the heart—margin of the tongue clean and of a bright red—pulse quick and feeble.

Continue medicines as yesterday omitting the paregoric.

18th. Find her setting up in bed, much better, though complains at times of palpitation of the heart, trembling at the stomach and faintness: pulse 94 and stronger—some heat in the stomach and bowels—pain, and impaired vision of the right eye. Carb. lig. ʒss. to be taken in divided doses during the day in a cup of barley water and gum arabic.

19th. Took a dose of castor oil last evening, which produced three dejections this morning. She was pretty well during the greater part of the day, but, having no medicines and but little nourishment, became more indisposed towards evening, had a slight rigor, pulse feeble and irregular, pain in her jaws, teeth, left breast and thighs—some heat in the stomach and numbness, mind gloomy but not wandering; this aggravation of symptoms is in some measure to be attributed to an ungrounded apprehension that more poison had been put into her barley water.

A teaspoonful of carbon afforded almost immediate relief. Tinct. opii. camph. ʒiss. ordered to be taken at bed time—broth, milk, and barley water to be continued, and carbon occasionally.

20th. Much better, pains of yesterday have generally subsided, pulse 80, tongue getting clean, some heat in the bowels.

Repeat the injection of barley water and gum arabic, carb. lig. a teaspoonful every three hours, milk, broth, and barley water as before.

21st. Passed a comfortable night and very evidently convalescent. Carb. lig. cont.

22d. So far recovered that I took leave of her, ordering the carbon to be taken occasionally for a day or two.

The symptoms of this case lead me immediately to declare it as my opinion, that the poison this woman had taken was that of arsenic. Upon inquiry I found that the tea had been made without scalding the teapot, and a small piece of biscuit was found floating on its surface. The leaves had been thrown away before my arrival, but as the pot had not been rinsed, I directed some more to be made in it for the purpose of analysis. This analysis was made by Dr. C. Robbins of Boston and my son who applied a variety of tests, particularly those of Bergman and Marcet, and confirmed all my suspicions that it contained arsenic. Tea from the same paper had been drank several days previous to this accident, and has been since used without the least bad effect; and from existing circumstances we cannot avoid the painful conclusion, that this substance was placed on the bit of biscuit, and designedly thrown into the teapot in the course of the afternoon by some individual, whose intentions could not have been altogether of the most amiable or benevolent nature.

Two facts worth remembering may be gathered from this case. 1st. That an aqueous solution of arsenic produces that peculiar tingling sensation in the eyes and face, which is the effect of *Fowler's* solution, and which is considered a mark that the system is under the influence of that virulent poison. 2d. That carbon affords speedy and effectual relief of some of the symptoms which remain after the ordinary evacuations in such cases have been produced.

It is not a little remarkable that of a family consisting of nine individuals, who are in the habit of meeting three times every day around the same table, so many should have escaped the fate of the mother. The husband had not returned from his day's labor; five of the children had accepted, but a short time before, an invitation to take tea with a neighbouring family, the eldest daughter and a little boy were at home; of these, the former seldom drinks tea and perceiving a disagreeable taste in a table-spoonfull which she took, was in no way tempted to deviate from her usual custom. This small quantity however was not altogether inert; she was affected much like her mother, and her face exhibited the same dark colour, but all her symptoms were proportionably light and lasted but about forty-eight hours. The little boy had a cup of tea turned out for him, but by some lucky accident upset the whole before he had tasted it, and to punish

him for his carelessness his mother refused to replenish it ; never was punishment more happily bestowed, and never were circumstances more happily combined, than in preserving this family from the wicked designs of jealousy and malice.

Hallowell, May 29, 1820.

A Case of Imperforate Vagina, which terminated fatally.

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[Communicated for the New England Journal of Medicine and Surgery.]

I GIVE you the following imperfect relation of a case which occurred a short time since, in the circle of my practice that you may publish it, or make remarks upon it as you shall deem expedient.

Near the middle of February, I was called to visit Miss — aged 17, found her apparently in the first stage of a common catarrhal fever, and made use of the usual remedies ; but her recovery was slow, and I soon began to suspect some morbid affection of the system that had hitherto escaped my notice. The symptoms however were considerably moderated in their violence, and at length assumed the form of a mild remittent. With the intention of exciting a more healthy action of the liver, I gave her sub. muriated mercury in alternate doses. In the mean time I had learnt from her mother that she had never menstruated ; that for a long time previous to her last attack, she had been subject to ill turns once in three or four weeks ; that she was at such times subject in a greater or less degree to the usual distress attendant on painful menstruation. Her countenance was of the chlorotic kind. Bark and other tonics were given her to a considerable extent, without any evident effect. In three or four weeks from the time I first saw her she was attacked much as at first, but complained of more distress. The stomach, and indeed all the viscera seemed to suffer alternately, but the contents of the pelvis suffered most. At this late period I learnt that she had a tumified abdomen, that it was most prominent *at first* on *one side*, but was now equally diffused. I at first suspected an ascites, but on discovering no evident fluctuation, concluded it might be a dropsy of the ovaria. There were many symptoms however, that I could with difficulty account for on that supposition, and the idea of an *imperforate vagina* suggested itself. I explained myself to the mother, and urged the necessity of an examination. The patient was unwilling, and the mother would not urge it. I called for counsel. They ad-

mitted *it might be so*, but thought it more probably dropsy of the liver, or uterus, &c. Of course nothing was done. She gradually wasted away, the subject of the most intense suffering, which I thought now I could well account for. I left her about the middle of April, for the purpose of performing a journey and was absent four weeks. During my absence I consulted Drs. — —, gentlemen of deserved eminence in the profession. They both pronounced it to be an imperforate vagina, and censured me for having too easily given up an examination. I resolved if my patient lived till I returned, though it might be too late to save her, to do the utmost in my power. She died a day or two before I returned, and had suffered excruciating distress to the very last. An intelligent woman who assisted in dressing her for the grave, informed me that she discovered a tumour protruding from the vagina, of an uncommon appearance, which from her description, *I have no doubt*, was the vagina itself, imperforate, and distended with the menstrual fluid. I take unqualified blame to myself, for having, while I was aware of her condition, notwithstanding the opposition of the patient and friends, neglected to take measures for her relief.*

May 31, 1820.

* We have printed the above as communicated by the writer, without alterations. It furnishes a most important lesson to physicians. The names are suppressed for obvious reasons, ED.

REVIEW.

Practical Illustrations on the Scarlet Fever, Measles, and pulmonary consumption; with observations on the efficacy of sulphureous waters in chronic complaints. BY JOHN ARMSTRONG, M.D. Physician to the Fever Institution of London. London, 1818.

THE work before us consists of four distinct treatises, or dissertations on the several subjects respectively, mentioned in the title page. They are all of them important and such as it behoves every physician to be well acquainted with.

Dr. Armstrong is a true follower of Sydenham. He paints diseases from nature, and he discusses those great questions in respect to the treatment, which must engage the attention of true physicians at all periods and in all countries. His works have done and will do the greatest service to the cause of science and humanity.

In his style, Dr. Armstrong has the eloquence which results from great earnestness. His animation keeps one awake, and interested in the objects which he brings into view, although he does not avail himself of all the advantages of an artificial method. It will not do even for an experienced reader to skip any of his pages, because a very important remark, or precept may be found, where it would not be looked for. We hardly know whether to call this a fault, or not.

If we professed to review every work which is published on medical subjects, it would be necessary to apologize for not having taken up Dr. Armstrong's other works before this. But they, and especially his "Illustrations of Typhus," attracted public attention so early after publication, and were so universally approved, that there was not much inducement to proclaim their merits. The work now under review does not seem to us to have been so much noticed in this country. And besides we were led to attend to it particularly in consequence of the recent prevalence of scarlatina among us. The measles also may be expected to recur in the course of a year or two. As these diseases show themselves only occasionally and are in some measure

forgotten meanwhile, it is useful to refresh the memory respecting them.

Every acute disease appears with very different degrees of severity and with great variety in respect to the assemblage of symptoms, which may attend it. The *exanthemata* are distinguished each by a peculiar local affection; and as this may occur almost, perhaps wholly without any constitutional affection, it is the local affection only, which is to be considered essential to them. This peculiar local disease must go through its course, and is not to be arrested by medicine. But though the local affection is essential to each of the *exanthemata*, it is the constitutional disease with its consequences, which is most dangerous; and this is susceptible of being influenced by remedies, especially at an early period.

All this is true in respect to *scarlatina* more than of any other such disease. In some instances this is not more formidable than a case of vaccine disease, while in others it does not yield to the plague, in the destruction of human life.

The varieties of this disease, which are most commonly recognized, and which are adopted by Willan and Bateman, are *scarlatina simplex*, *scarlatina anginosa* and *scarlatina maligna*. To these however is added the variety, which is not so properly scarlatina, in which the throat is affected from the contagion of this disease, but in which the skin is not affected. This last not very rarely occurs in one, who has at a previous time undergone the cutaneous affection; for the cutaneous affection, with very few exceptions, appears only once in the same subject. Dr. A. adopts the common division of the varieties of this disease, but not without objecting to it; and then makes some sub-varieties of *scarlatina maligna*. These sub-varieties are made in correspondence with his views of febrile diseases in general.

Scarlatina simplex is marked by the specific inflammation of the skin, and, in almost all cases, of the internal fauces. It is commonly preceded for a day by a slight constitutional disturbance. This disturbance is often no more than a change in the functions of the digestive and secreting organs, with consequent diminution of appetite, and irregularity as to temperature.

In the *scarlatina anginosa* the inflammation of the throat is more severe, and the constitutional affection both greater and of longer duration. The constitutional affection is of that kind, which has been called "*general inflammation*;" but this is not in its purest form commonly, for in almost every case it is mixed with what Fordyce and others have called "*symptoms of morbid irritation*." The pulse are usually more rapid and there is a greater sense of faintness and sinking, than properly belong to active constitutional sympathy, or general inflammation. This is a cir-

cumstance to be particularly borne in mind, not as forbidding the vigorous adoption of what has been called the "antiphlogistic treatment," but as a reason for avoiding violence in the prosecution of that treatment. That suddenness of impression, which is useful in many other inflammatory diseases, is not always to be made with impunity in this. The same remark is true, though not in the same degree, as to other cutaneous diseases.

Scarlatina simplex can scarcely be called a serious disease; and *scarlatina anginosa* is very seldom fatal among patients, who have the benefit of professional attendance from an early period. The greatest danger in this variety is, that a case may change its character and come within the confines of the third. For it is always to be kept in mind, that the disease is specifically the same in every case; and that, however it may commence, it may assume very different appearances before its termination. Cases, which come under the third variety, are not all equally bad; though all of them are attended with danger to life. This difference has commonly been considered to belong only to the degree of violence in the disease. But Dr. Armstrong thinks that it is referrible to other causes, and the distinctions, which he makes in this variety, constitute the most important part of his treatise.

The characteristics, which would generally be recognized as belonging to *scarlatina maligna*, are the following. The eruption does not pursue a regular course, oftentimes disappearing partially, or wholly, and returning again; or else entirely subsiding prematurely; or the colour of it becomes more dark and livid than in favourable cases. The inflammation of the throat produces deep and foul sloughs, and sometimes terminates in gangrene. The constitutional affection is marked by great excitement of the vascular system, or by great irregularity in the functions of that system, with a very variable state of the temperature, and extreme prostration of strength; to which is commonly added either coma, or delirium. The disease is rapid in its course and, when unaided by art it terminates fatally, in a large proportion of cases. This is a general description however, but Dr. Armstrong makes three sub-varieties of the *scarlatina maligna*, which he links together only because his predecessors had confounded them under one common name.

"The *Scarlatina Maligna* of authors ought not to be described under one indiscriminate form, as has generally been done, since it most unquestionably comprehends three varieties; the first of which is highly inflammatory, the second highly congestive, and the third has certain relations to both of these, because it is attended by venous congestions of the viscera, and by a partial and an impeded arte-

rial re-action. But these varieties shall be separately described, and some remarks subjoined to each, by way of more clearly showing their leading peculiarities." p. 11.

The *highly inflammatory scarlatina maligna* differs from *scarlatina anginosa* in degree more than in kind. But it is very often fatal, and that at an early period; and this Dr. Armstrong believes to happen in consequence of inflammation in one, or more of the great viscera. Sometimes it is in the head, sometimes in the thorax, and sometimes in the abdomen that inflammation occurs; and in each case it is marked by the appropriate symptoms.

"But whatever parts may be disordered, the stage of excitement soon begins to give way, and is followed by that of collapse, in which the heat is diminished; the general powers fail; the pulse becomes weaker and quicker; the skin laxer; the tongue fouler; and the respiration more laborious—in a word, those symptoms called putrid and malignant are now conspicuous. In this last stage patients sink under convulsions, vomiting, or suffocation, according to the organ principally affected. But in whatever mode death approaches, there is always, in the beginning of the disease, a marked and unequivocal stage of general and high excitement, to which the appearances of extreme debility and putrescency of the last stage may be clearly traced as mere consequences." pp. 13, 14.

That the parts mentioned are inflamed, and that death is produced by the disease of those parts, Dr. Armstrong feels warranted in asserting from examinations after death.

The second variety of *scarlatina maligna*, denominated by Dr. Armstrong the *highly congestive* and also the *regular congestive* form of the disease, will be understood in some measure from the following extracts.

"The subjects of this modification are for the most part suddenly attacked. They become pale, faint, and sick; and chiefly complain of pain, load, or giddiness in the head; extreme oppression; and much uneasiness in the region of the heart, or at the pit of the stomach. Sometimes they at once sink, as if overcome by an uncommon shock, and lie in a state of confusion and oppression, without making much complaint. At other times, they walk about pale and languid for two or three days, and then take to their beds, like persons completely worn out by some great fatigue, or mental anxiety. When the attack has once decidedly occurred, the respiration is either quick and anxious, or slow and impeded. There is often a mixture of livor and paleness in the face; the eyes are frequently dull, but sometimes glairy, and they acquire a fatuous or an inebriated expression in the course of the disease." pp. 23, 24.

"This form of the scarlet fever frequently runs its fatal course in two, three, or four days, from the occurrence of the extreme general oppression; and there are almost always appearances of putridity

in the last stage, such as oozings of blood from the mouth or nostrils, dark hemorrhages from the bladder or bowels, inky petechiæ, or gangrenous spots upon the skin. A few hours before death there is often a superficial glow of heat diffused over the body, accompanied with a darkly flushed face; high breathing; accelerated pulse; and partial or general sweats. But this mere semblance of excitement soon subsides: the extremities grow cold; the face assumes a cadaverous hue; and where the skin is pale it often has almost the smooth, waxen appearance of the surface of a corpse.

“In this regular congestive form, the efflorescence is from the first of a purplish or copperish hue, and deepens as the disease advances. Sometimes it quickly recedes without ever returning again; a circumstance which, though not peculiar to the congestive modifications, is most liable to occur in them. In some very rapid and fatal cases of the form under consideration, the throat is but slightly affected; yet in the instances which continue beyond the fourth day, there are generally specks or sloughs in some part of the fauces; and I have witnessed those appearances when there had been previously little or no constitutional excitement.” p. 25.

“The affection of the throat, abstractedly considered, is perhaps rarely the cause of death. In what parts then, it may be asked, are the principal derangements to be sought in this form of the scarlet fever? It may truly be answered, in venous congestions of the brain, liver, spleen, lungs, or of the vessels about the heart; for if these congestions be not timely removed, they produce an universal collapse, and visceral disorganizations, and also tend to change the constitution of the blood itself. In four mortal cases of this form, after death the brain and liver were found engorged with grumous blood, and the large vessels in the vicinity of the heart much distended; with some loose and large coagula in the right cavities of that organ, while the left auricle and ventricle were empty and partly collapsed.” p. 26.

The third variety which “has relations to both of the others” is called by Dr. Armstrong *the irregular congestive* form of the disease. It is sufficient to say in this general view of the subject, that it partakes of the characters both of the highly inflammatory and of the congestive forms of the *scarlatina maligna*. There is according to our author venous congestion with arterial excitement.

The following remarks appear to us too important to be omitted.

“Before concluding the history of the scarlet fever, there is one circumstance, to which I cannot refrain from pointedly adverting, and it is simply this:—when that disease prevails epidemically, children and even adults, some time after exposure, now and then die suddenly, from the operation of the contagion, without any appearance of efflorescence or of sore-throat. They are attacked with

convulsions, or with the symptoms of apoplexy, and frequently sink into insensibility and death in a few hours; and therefore, properly speaking, such instances are but increased degrees of the regular congestive variety. No author, with whom I am acquainted, has noticed this the occasional effect of the contagion of the scarlet fever; but as it took place casually during an epidemic, witnessed some years ago, I have deemed it a duty to record it here. Occurrences of this kind, it is well known, are not uncommon in the plague: and perhaps they happen oftener in the contagious fevers of this country than we are at present aware; at least they are not limited to the contagion of this particular fever, but now and then follow that of the measles, and of typhus." p. 30.

Many physicians in New-England in reading this extract will be reminded of the epidemic, commonly called *spotted fever*, in which such sudden deaths were noticed; especially during the first years of its prevalence. Such sudden deaths may undoubtedly occur, even when fever prevails under a comparatively mild character.

Our author gives both general and minute directions respecting the treatment of scarlatina. We must state these very briefly, but not because the whole is not worthy of careful attention. He agrees with all judicious practitioners in urging the early use of active remedies, before the system has become too strongly engaged in morbid processes and before any of the great viscera have been injured, either by inflammation or by congestion. He uses brisk purgatives, active emetics and the tepid bath even at the first moment, in "*the stage of oppression.*" He relies on the same remedies to reduce the heat and quickness of pulse. If any internal organ appears to suffer more than ordinary pressure even in the earliest stage, he first uses "a warm bath, strongly impregnated with salt," and immediately afterwards applies a few leeches near the part affected, or takes a *very little* blood from the arm.

In the stage of excitement of *scarlatina agnosa*, cold and tepid effusions, with cautions pointed out in the work, in conjunction with purgatives, will generally suffice. In urgent cases however bloodletting is thought by Dr. Armstrong not only safe, but necessary. But, when the disease has advanced far, all evacuations, even in inflammatory cases, must be made with caution. *Laxatives* indeed may be employed to a late period.

A much more energetic course is recommended in the "highly inflammatory form of the *scarlatina maligna.*" The stage of excitement is short in this, but it is violent, is productive of incurable organic disease, and is followed by an entire yielding of all the vital powers. Tonics and cordials, the only resort perhaps in the desperate circumstances of a later stage, had become the estab-

lished remedies since the days of Fothergill; and the use of them had been enforced by the delusive doctrines of debility, which were prevalent when Dr. Armstrong commenced practice, He tried them, no doubt with good faith, but soon learnt from abundant experience that "they are most pernicious in the first stage and most destructive in the second." Led by experience he advises a different course, not as being invariably successful, for what can be so under such circumstances; but as being generally so, when adopted at an early period.

"Instead, then, of adopting the stimulant plan, let the practitioner give a fair trial to the cold affusions as soon as the stage of excitement is developed; and if they should not effectually reduce the fever, let him not pause an instant longer, but open a vein in the arm or neck, or a branch of the temporal artery, and allow the blood to flow until it is stopped by an approaching faintness." p. 56.

If this evacuation should not produce marked relief, it should be repeated, not the next day, but in an hour or two; or, in a doubtful case, let leeches be applied near the organ, which seems most affected. But, if possible, the repetition of bloodletting should be avoided by an effectual evacuation in the first instance. Let the head be shaved and be kept cold by wet compresses, if the brain be at all affected. Follow these remedies promptly by active purgatives, and persist in them till the arterial excitement and the heat are reduced.

Success is to be expected from these measures, only when they are rigorously pursued during the stage of excitement. It is not an objection to the method that, even then, it does not uniformly ensure a favourable termination, under one of the most fatal forms of disease, which affects the human system. It is enough that those, who have tried it, have found it successful in the great majority of instances; while the violent opposers of this treatment are those, who have thought too ill of it, ever to try it at all.

We have been the more full on this subject, because the same principles are to be applied to many other febrile affections, in which the same "highly inflammatory" actions tend to the same rapid disorganization, and to the same overthrow of the vital powers.

In the *irregular congestive form of scarlatina*, that in which the disease partakes partly of the inflammatory and partly of the congestive character, Dr. Armstrong advises the following plan. First, brisk purging with calomel, &c. until the general oppression is overcome and the hepatic disorder corrected; second, to keep the bowels soluble afterwards by more gentle remedies; third, to use the warm bath twice a day for the first four or five days, and afterwards once a day.

“In bad cases where, from neglect, the feces have been allowed to accumulate, it is sometimes absolutely necessary to purge briskly for a short time, even in the stage of collapse. And whenever this is done, the strength of the patient must be supported by the occasional exhibition of good wine, during and after the operation of the purgative, as has been fully explained in treating of typhus. But it must be recollected, that so long as the stage of irregular excitement continues, wine is generally a dangerous agent; warm diluents, such as gruel or weak chicken broth, being infinitely preferable.” p. 78.

In the *regular congestive form of scarlet fever* our author advises as follows. First, to produce equal heat and free vascular action on the surface by a warm bath strongly impregnated with salt, or if this cannot be had soon enough, by frictions with stimulating substances, bladders of hot water, &c.; second, under the influence of these remedies to abstract as much blood “as will free the pulse from oppression;” for which purpose however it is not necessary to push the evacuation to the same extent, as in the inflammatory forms of the disease; since the state of the circulation is very different in the two cases. In the one there is great excitement in the heart, and in the extreme arterial vessels, and a failure in the functions is not easily produced by early depletion. In the other there is a failure in these organs, while there is congestion, from torpor, in the venous system. If the mass to be moved be diminished somewhat, the organs may act upon the remainder and thus the circulation be restored. If this mass be suddenly diminished to a great amount, a failure in the actions of the heart upon what remains may prevent the restoration of the circulation. If the circulation be not restored after venesection “small and repeated portions of warm wine and water” are advised until this object be effected, but no longer. Then the large intestines may be evacuated by a full stimulating, cathartic enema. Afterwards calomel may be given freely with a view both to purge and to act on the vascular system; with other cathartics afterward, if needful. On this point, as on many others, the practitioner will find excellent directions in detail in the book before us.

We must add a few words on the *sequelæ of scarlatina*. Dr. Armstrong, like all the English writers, speaks of dropsical effusions as frequent after all the varieties of this disease, particularly if care be not taken “to preserve the surface from cold, to keep the bowels regular and to avoid the exhibition of diffusible stimulants.” Dropsy does occur under these circumstances among us; but we wish to state that it has been very much less frequent than we presume it to be in Europe, and less than we formerly looked for, from the works we had read on the subject. On the

other hand we have noticed during the prevalence of a mild and almost safe scarlatina for a year past, another disease to follow it in a large number of cases. This is rheumatism. We can give it no other name, for its symptoms have been pain in the neck, back, and limbs, aggravated by moving these parts, and affecting them in succession. This has sometimes been very severe, but has seldom continued more than three or four days. In two or three cases it has been accompanied by swellings, like those of acute rheumatism, round the large joints.

We will take this occasion to remark that not only during the last year, but, with the exception of 1802, for more than thirty years past the scarlet fever has not appeared under a severe form in this place. During the last year it has with few exceptions been a very mild disease. But the same has not been true in respect to some other parts of the country during the period above mentioned, and at former times, this disease has been among the most fatal scourges of New-England. We may consider ourselves therefore as by no means exempt from the worst varieties of this disease, and should be prepared to treat them.

The second treatise in this volume is on *measles*. This treatise has less pretension to originality than the first, but it evinces careful observation and sound judgment. Measles is sometimes either accompanied, or followed by very grave affections of the lungs, brain, or abdominal viscera. It is then attended with danger and is to be met by very active treatment. In some rare cases perhaps, without any internal affection, there is such a failure of the vital powers, that the cutaneous disease is either not fully developed, or not perfectly maintained; and here there may be danger. But in the great majority of cases, the disease terminates favourably without our aid; and although it may be proper to employ some remedies to mitigate it and to guard against possible evils, yet very active treatment is not requisite. The danger may even be increased by too much interference. Such is our own experience, and such appears to be that of Dr. Armstrong.

Perhaps the disease has been peculiarly mild since we have been on the stage, and in this vicinity. It has been epidemic here from once in four to once in seven years, and only once within our knowledge two years in succession. We have seen four returns of it, and our experience has not been very limited, at either times: yet we have scarcely seen a death from this disease in which it has not been complicated with some other. In some few instances venesection has been proper, and in some more, vesication; but, generally, evacuations from the alimentary canal at an early period, with rest and low diet, have been suffi-

cient. But we have always forbidden the use of stimulants, to which the common people are attached, from the fears which they have learnt from our professional ancestors that the eruption would "strike in."

Dr. Armstrong has seen a larger proportion of bad cases, and these he has well described, pointing out the treatment adapted to them. We recommend his observations and precepts to our readers. We shall not however give an analysis of them, because we perceive that this article is becoming longer than we had contemplated, and there is very much to interest us in the remaining parts of the book.

Pulmonary consumption is the subject of the third treatise.

"By pulmonary consumption," says our author, "is now generally understood, a disease dependent upon tubercles seated in the cellular connecting membrane of the lungs; but under this title it would appear that different diseases have not unfrequently been included in medical writings." p. 181.

This statement does not appear to us quite correct. We doubt whether it is generally understood that tubercles exist in all cases of this disease; on the contrary, most intelligent practitioners seem to us to distinguish tubercular cases of *phthisis pulmonalis* from others; and the same seems to have been done by all good writers of modern date upon this subject. That is, the existence of *phthisis pulmonalis* with tubercles and without them is recognized. For we do not mean to say that the symptoms, by which these cases are to be distinguished, are generally understood; nor even that they are perfectly ascertained by any one.

Not only the distinction of tubercular cases from other cases of pulmonary consumption is generally made, but these other cases have been variously divided. Bayle, whose work Dr. Armstrong had not seen, when he first published his treatise, makes six species of this disease; founding his division not on symptoms, but on the different kinds of lesion, which are discovered in the examination of phthisical subjects after death. He says that he is not satisfied that there are not still more species. But the division, which it is most desirable to make for the purposes of practice, is between cases, which arise from a constitutional tendency to the disease, and those, which arise from causes operating on healthy, or well-disposed constitutions. This distinction is important, because the treatment in the two descriptions of cases must be different. This is the distinction made by Sir Richard Blackmore, as quoted by Dr. Armstrong. It is in the disease, which is of constitutional origin, that tubercles are generally understood to have taken place. Undoubtedly this is

true in the great majority of cases, if not strictly in all cases of this description.

The subject of the tubercular *phthisis pulmonalis* is thought by Dr. Armstrong to be of a strumous habit in all cases, with the addition of an hereditary tendency to the formation of tubercles. The existence of tubercles may perhaps in itself be considered as evidence of a strumous habit; but certainly, though there is abundant evidence of such a habit in many consumptive patients, there are not a few tubercular cases, in which such a habit has not been suspected before phthisis has occurred.

The occasion invites us to bring into view the distinguishing characters of the different species of the disease under consideration. The constitutional, or, as it may be called, the *tubercular phthisis pulmonalis* is to be known partly by the symptoms of the disease, and partly by other circumstances. If a family be consumptive we suspect the approach of this disease, upon very slight symptoms, in one of its members, whose form and general appearance would not otherwise excite our apprehensions. If, in a family not of this description, one of its members has the flat chest and long neck, the shoulder blades standing off like wings, the delicate skin, the large blue eye, with perhaps exalted sensibility, and other marks of a strumous habit, we are equally alarmed even by indistinct marks of disease in the lungs, and justly deem that an alarm will be useless, if it be deferred until more evidence is obtained. In both the cases now described we must also be on our guard, when acute inflammation affects any part of the internal respiratory organs, although this be attended at first by symptoms, which ordinarily are deemed of little importance. Catarrh for instance may begin phthisis of the most irremediable kind in such cases; because the determination of blood to the mucous membrane of the lungs, often serves as the occasion for bringing on an active process in tubercles previously dormant. But of this hereafter.

Secondly, where we have not been prepared for the occurrence of tubercular phthisis, by a knowledge of a disposition to it in the patients family, nor by his form and constitution, we may ascertain it by the circumstances developed by the disease, or in other words by its symptoms. We may be deceived in such a case, where the disease is prematurely induced by catarrh, or by any common inflammation. But when it comes on in its own gradual manner, it cannot easily be confounded with any other species of phthisis.

In this case the first symptoms are very unobtrusive; but, if the attention be once excited to them, they will be found sufficiently positive in their character, however moderate in degree.

Some obstruction is manifested in all the functions, which appertain to the respiratory organs. The voice loses something of its fulness and it is lowered in its tone. Sometimes the patient speaks with more quickness, but he makes short sentences. If forced to exert himself in conversation, his face becomes flushed, his countenance betrays fatigue, and his respiration is quickened. This last effect is very readily produced by any exercise, or exertion. The respiration is almost constantly shorter and quicker than in health, though it is commonly tranquil. The effort is seen most distinctly in the motions of the *alæ nasi*. The patient is uncomfortable in a close, or in a crowded room. A full inspiration, talking, any exertion, a change of temperature, as in passing from a warm room into a cold one, will occasion a slight cough, which the patient seems scarcely to notice, and which he seems unwilling to have noticed by others. On some mornings there is an easy expectoration of glairy mucus, very little coloured, and on those days the respiration and all the feelings are more comfortable; but, when this has not taken place, there is more or less of anxiety about the chest through the day. Meanwhile from an early period there is a very slow wasting of the flesh and strength. This wasting is so gradual however, that it is only seen by a watchful eye, until, apparently from accident perhaps, there takes place some increase of disease; and then the patient *seems* to shrink much more rapidly, than he does in fact. On the first occasion for examining the pulse, they will be found already increased in frequency.

“The condition of the skin in conjunction with other symptoms, may enable us to form the diagnosis of the true tubercular phthisis. In the advanced stage of this complaint when suppuration has taken place the diagnosis is most obvious, but of little practical utility, for at that time medical aid is almost always unavailable. It is therefore most desirable that we should if possible detect the disease when the tubercles are either forming in the lungs, or when, having previously existed, they are first roused into irritation by an incidental cause. It appears to me, that the first changes which indicate the approach to phthisis are to be found in the skin. The colour of the cheeks always becomes paler and more delicate than before, while that of the lips is often of a brighter red. If the practitioner place himself directly opposite to the patient, and look steadfastly on his face for some time as he converses with him, he may generally observe the colour come and go in a surprising manner. A beautiful bloom will be spread for a moment over some part of the cheeks, and then receding it will leave a remarkable palidity, almost approaching to whiteness. Whenever this symptom is obvious, with a pulse somewhat quicker than natural, and a short tickling cough, phthisis may always be apprehended. It must be distinctly understood that

I am now speaking of an incipient or a threatened phthisis, for the above observations will not obtain at all its stages. At this period, too, the whole surface appears paler than in health, and the superficial veins may be observed running in different parts of the skin, somewhat like blue lines through white marble. The hair, from some change in the cutaneous secretion, frequently loses its natural brightness, is laxer or softer, and acquires a dingy or dirty shade; and whatever pains may be taken, it will hardly ever remain well in the ordinary mode in which it was dressed. The eyes undergo striking alterations, and with them the expressions of the countenance. The tunica adnata, which may be almost considered a modification of the skin, mostly becomes of a faint bluish white colour, and the eye has a glassy or glistening appearance; and an expression of interest, and even of beauty is not unfrequently thrown over the whole countenance, very remarkable in persons whose face had been previously plain. This change is most manifest in females, on account of the greater delicacy of their skins. The tongue generally participates in these morbid variations of the cuticle, so that its surface for the most part becomes smoother and frequently a little redder than formerly, except in those cases where the digestive organs are disordered at the same time, and then it is often rough and white. The temperature of the skin is never perfectly natural from the first. It is chilly and hot, cool or warm by turns, and some degree of fever may generally be detected after a full meal, though it is most apparent towards night." pp. 264—266.

The accuracy of these remarks will be acknowledged by experienced practitioners, and they show the peculiar talent of the author in painting the delicate traits of disease.

These are the most characteristic attendants on *tubercular phthisis* at an early period, but in many instances there are others. Thus *anorexia* and *dyspepsia* often occur and arrest most of the attention, and the subsequent manifest disease in the lungs is even considered, as secondary, and as the product of debility. Ultimately, though often these events are much delayed, expectoration of pus and hectic fever ensue as in other cases of pulmonary consumption, and commonly the hectic is exhibited in a more distinct and exquisite form in this, than in any other species of the disease. Hæmoptysis often occurs in this disease, and it may be the first symptom of it, or may occur during its course, or may bring it to a sudden and unexpected termination. There may perhaps be other species of constitutional *phthisis pulmonalis*, and those may be marked by other symptoms. But this, of which we have described the early stage, is by far the most common, and is the species, which is so generally known and dreaded. As already intimated, and as is distinctly noticed by Dr. Armstrong, this species of the disease may be suddenly developed; or may be much hastened in its course by accidents. Common inflam-

mation, however induced, in either the mucous, cellular, or serous membranes of the lungs, will bring into activity tubercles, which might otherwise have remained dormant for a long period and perhaps always. It is the confusion arising from this mixture in the character of individual cases, which prevents us from being able to refer each case to its class, in all instances.

It is, however, certain that the distinction is founded in nature between the constitutional disease and that from accidental causes; or, if it please any one better so to state it, between cases, in which the inflammation is scrophulous, and those, in which it is of the common character. It is certain likewise that among these last cases we find differences of character, on which we may ground an arrangement of them into species. The question then is how many such species there are. To this it may be answered that it will depend on the degree of minuteness, to which we mean to carry our distinctions, how many species we shall make; and that, after all, we cannot draw lines of distinction for species so, as that every case will find itself exactly included in any one of those species.

To be prepared to understand the various cases, which occur, we must in some measure disregard the distinctions of species, so far as respects cases of simple, or common inflammation, and pursue a different course. This is, first to study the laws of inflammation, to learn the different processes which occur in it, and how these are varied in number, in order and in kind, in the different textures, in which they take place. Second, we must attend to the symptoms, which arise from these processes, when affecting the various internal organs; particularly studying the differences in these symptoms, not only as arising from inflammation in different textures and during different processes, but also as arising from the extent of the disease, the rapidity of its progress, and the natural sensibility of the patient. For one man will feel much more from the same morbid process than another. Third, we must not only view in a general way the difference in the processes of inflammation when seated in different textures, we must study minutely the symptoms, which consist in a mechanical embarrassment of the organs involved in disease. Difficulty of respiration for instance is not of the same kind, whether it arise from inflammation of the mucous, cellular, or serous membrane. Fourth, we must become acquainted with the secondary derangements of the functions in other parts under these different circumstances; and particularly we must learn the greater, or less readiness, with which the whole constitution becomes diseased, in consequence of the various local affections adverted to. Thus the constitution is not so deeply nor so readily affected by

inflammation of the mucous membrane, as by the same affection of the serous membrane. More might be said to show the mode, in which the physician must prepare himself to understand the various cases, whether simple, or complicated, in which the lungs become involved in disease by simple inflammation. But enough has been stated to show that it is by a careful and minute study of general pathology that we must be prepared to understand the diseases not only of the lungs, but also of other organs. With this preparation an exact decision upon the number of species of pulmonary consumption, when not connected with specific inflammation, is at least un-essential. It may be added that the same preparation will lead one to understand a complication of diseases in other organs with disease in the lungs ; whether those diseases have preceded and introduced, or have followed the pulmonic affection.

Having given this general view, we are ready to assent to the division adopted by Dr. Armstrong and others, and which indeed we have always made ourselves, so far as we have thought it useful to make any other, than the general division between tubercular cases and others. We shall give his own language on this point.

“ Four affections may be mistaken for the tubercular phthisis, even when they occur in their least complicated forms ; and these affections are, namely, chronic inflammation of the bronchia, ulcerations in the trachea, chronic inflammation of the pleura, and lastly chronic and simple inflammation of some portion of the lungs themselves.” p. 181.

This division, with the exception of the disease of the wind-pipe, corresponds with that made by Dr. Duncan. In another part of the book Dr. Armstrong refers to Dr. Philips’s valuable paper in the *Medico Chirurgical Transactions*, Vol. VII., upon the connection between hepatic and pulmonary disorder.

We shall not follow our author in his discussions respecting the remote causes of pulmonary consumption, but will merely remark that he lays great stress upon the morbid states of the skin as frequently leading to internal diseases, and especially in the lungs. The remark that such an influence exists has nothing of novelty ; but we do not recollect a writer, who seems to have taken such just views of this subject, as Dr. Armstrong has done ; and these are connected with principles, which should govern us both as to prevention and cure.

In respect to *tubercular phthisis* we must consider measures of prevention and those of cure ; but the former are the most important. At least we believe the physician could do much, if he could have the entire direction of persons disposed to this dis-

ease ; while, even at an early period after the disease has supervened, he will generally fail to cure, and at a late period almost in every instance.

No one pretends to be acquainted with a remedy, by which tubercles can be removed. But so long as there does not occur any process of inflammation in these tubercles, the subject, in whom they exist, may enjoy a very tolerable share of health. If they do sometimes excite inflammation in the surrounding parts by the irritation, which they produce, without the aid of other causes, yet this is not common. In most instances a careful investigation will show that other exciting causes have lighted up the fire, which, spreading to these combustible materials, cannot afterwards be extinguished.

If then we have a subject, whom we think liable to tubercular consumption, or in whom we may believe that tubercles already exist, the following principles should govern our treatment of him. First, the susceptibility to the influence of exciting causes of inflammation must be diminished to the utmost possible extent. Second, an exposure to such of these exciting causes as will still operate, notwithstanding the precaution suggested, must be avoided. Thirdly, if inflammation be induced in any part of the body, but most especially if in any of the pulmonic textures, the earliest and most efficacious measures must be taken to arrest the disease at once.

First, the susceptibility to the exciting causes of inflammation must be diminished to the utmost possible extent. To remove this susceptibility entirely is impossible. There is not any living offspring of the earth, in whom inflammation may not be produced. But it is produced more readily in man and in all domesticated animals than in any other of that offspring. To avoid this malady we shall not advise to a savage life ; but we shall advise to guard as far as possible against the evils of civilized life. These evils have respect to the abuse of our chairs, our beds, our boards and our houses.

We hold that inflammation is produced by any cause, which interrupts, or considerably deranges any function of the body. It is produced more, or less readily, according to the predisposition of the subject ; and in such parts as are predisposed. It is the interruption of the functions of the skin, which has been most frequently and most generally observed to produce inflammation. But, though less frequently, an interruption of the functions of the stomach, or of those of the bowels, or of those of the uterus, will often occasion a similar effect. The mode, in which an interruption of the functions of the skin produces inflammation, has generally been explained mechanically. It is

said that a contraction of the cutaneous vessels and a retention of the matter of perspiration occasion an increased fulness in the internal vessels, and thus either directly, by the surcharge of blood, bring on inflammation in some internal organ ; or else by increasing the momentum of the circulating mass, the disease is produced in parts least able to bear this effect. We mention this explanation only to say that we do not altogether admit it. It seems enough to ascertain that an interruption, and especially a sudden one, of any important organic function will occasion disease ; and that the kind of disease will be determined by the predisposition of the subject. In a very large proportion of cases it is common inflammation, in some it is rheumatism, in some fever, &c.

If this view be correct, the next question is how we shall avoid this interruption of the organic functions. To this the general reply is, that it is to be done by cultivating a hardiness of the system, and at the same time avoiding all violent and rash exposures of the organs to the external offending causes.

For instance, in respect to the skin, which is apt to suffer from vicissitudes in the temperature of the surrounding medium, we must habituate it to exposure to all ordinary vicissitudes, and as far as possible avoid the influence of such a high temperature as will increase its liability to suffer. The protection to be derived from our houses and our beds is of the utmost value, and without it we could scarcely exist in such climates as ours. But if we keep constantly in the house, we abuse our privileges ; and to say nothing of any other effect, the skin becomes so tender as to be readily affected by those changes which necessarily occur in the house, and even in a single apartment. In like manner, if going to bed late we continue in it in the day time instead of the night, or if we spend too much time in it, evils of the same kind are produced in respect to the skin.

It is not enough to expose the skin to the common vicissitudes of the atmosphere. We shall render it more hardy by frequent cold bathing either partial or general ; though most so by the latter. An air-bath night and morning with friction will also aid in producing the same effect. And, in addition to these direct modes of acting on the skin, those must be employed, which strengthen other parts and thus prove beneficial indirectly. Of these, muscular exercise may be mentioned as the most important ; and the more so, as by its immediate effects it enables us to maintain a sufficient warmth under all varieties of temperature.

Exercise in the open air then and cold bathing prudently pursued, but pursued with constancy and to a great extent,

will prevent one from frequently taking cold. Still, a man of tender constitution should be cautious never to excite violent heat in his body; and if produced by inevitable causes, and especially if accompanied by fatigue, he should cautiously avoid a sudden change by going into a cold atmosphere, and especially he should avoid resting in such an atmosphere in this state.

From what has been said we may deduce some rules in respect to clothing. Of these the first is to avoid the habit of wearing more clothing than is necessary to maintain a comfortable warmth. This rule would seem the dictate of common sense; yet the most common practice is to urge on the feeble particularly the use of a great quantity of cloaths, in the night and in the day, as if the heavier, and the thicker the garments the greater the security. It may be added under this head that persons going into a cold atmosphere require more cloaths, when their exercise is to be passive, than when it is to be active.

The second rule as to clothing in variable climates is to put next to the skin substances, which are bad conductors of heat. This is especially important for the feeble and tender, and for persons who are prone to pulmonary consumption. This is very generally understood, and hence every such person is furnished with a flannel, or other woollen shirt. But Dr. Armstrong mentions one common abuse of this garment, which is the keeping it on in bed, as well as when out of it. This practice lessens the good effects of the garment in the day from the skin's becoming too much accustomed to it; and there is no use in such a garment in the night, when we are not exposed to any sudden variations of temperature. There is another evil practice in respect to flannel shirts, which appears partly to arise from a prejudice and which is not confined entirely to the filthy and vulgar. The evil practice is not to change them frequently, and the prejudice is that it would be "weakening" to do so. This is the worse, since the flannel is so commonly worn in the night, as well as day.

To what has been already said on the means of becoming hardy we shall only add a few words as to the stomach. This is to be rendered strong and the whole system is to be invigorated by a sufficiency of good nutritious food. But we cannot increase our bulk by habitually putting into the stomach more food than it can digest; on the contrary by this practice we disable that and the other chylopoietic viscera from doing as much work, as they otherwise could do. And, secondly, we cannot ultimately benefit the stomach, nor the rest of the system by habitually applying to it articles, which are merely stimulant. It is not then by strong drink that the candidate for pulmonary consumption will be rendered vigorous. If he can be persuaded to drink water, it will in

most cases be best; if not, malt liquor, and as Dr. Armstrong thinks, ale particularly, is to be preferred to strong wine or to distilled spirits.

Secondly, notwithstanding all the cautions suggested, the system will be liable to the action of the exciting causes of inflammation, when powerfully applied to it. This will happen in different degrees in different instances. Such an exposure to causes must then be guarded against. But how can they be guarded against, while endeavouring by exposure to render the system insensible to their operation? It is this, which requires judgment in the physician, or in the patient, or in both. The great secret is to avoid violent changes; to proceed gradually, yet to proceed steadily.

Thirdly, if inflammation be induced in any part of the body, but most especially in any of the pulmonic textures, the earliest and most efficacious measures must be taken to arrest the disease at once. If the inflammation be in *any* part of the body and be allowed to run its course, provided it be so great as to affect the constitution, there is a great chance that the lungs will become diseased in consequence. This is shown by experience. If the inflammation be in the lungs themselves, it is almost certain that suppuration will be brought on in the tubercles. It is only by stopping the disease in its outset that the disastrous consequences can be prevented. But to do this we must encounter difficulties on every side. Except at an early period we shall fail in most cases, whatever course we take. The disease is not to be arrested without adopting active treatment. Evacuations are requisite. Yet, in such cases as we have under contemplation, the constitution is ill-fitted to bear evacuations. We must then be cautious not to make them greater, than imperious necessity requires in order to affect the purpose in view. To make them less would be worse than useless, for we incur the risk in great part without the benefit. It is better no doubt to incur some risk by the use of remedies, which have a chance of success, than to leave the patient to the almost certain fatality of the disease. We must then take blood, if the patient is at all fitted for it; we must bleed locally, if not from a large vessel; we must vesicate, evacuate the alimentary canal, employ alteratives, prescribe the mildest and most moderate diet and subject the patient to confinement. If our measures do not succeed in checking the disease at least in three or four days, the labour will be in vain. But if they do so succeed, we must then trust to vesication and to a cautious use of alteratives, and begin at once to return to a more nutritious diet, before exhaustion has taken place and thus

a different avenue opened for the enemy we have been guarding against.

This in brief is all we can do to prevent tubercular *phthisis pulmonalis*. If we live in such a climate that a tender subject cannot endure the method proposed, if his lungs have already become tender and are irritated by every change of weather, we must send him to a milder climate. But why not, it has been asked a thousand times, regulate the temperature of his apartments and thus make a climate for him? A consideration of what has been stated will furnish the reply. Without *exercise in the open air*, he cannot acquire the necessary firmness, or hardihood. This exercise he may enjoy in the mild climate, when he cannot in a severe one. But this he cannot have in that limited space, which can be rendered mild artificially.

Even when the disease may be said to have commenced, there is some little chance from sailing and a change of climate. But, when it has become fairly developed, we think the patient is exposed to unnecessary sufferings in adopting this course. Unhappily, when the case becomes most hopeless, the patient, and too often his friends cannot be persuaded that there is no chance, and then he goes to be buried in a foreign grave. The benefit of the remedy is thus brought into discredit; others hesitate to resort to it, when advised to do so, at an early period; but in their turn adopt it, when too late, as the last resource.

It would be unjust to our author to say that we have given an analysis of his excellent treatise on pulmonary consumption. We have in the latter part of this article rather given our own views, inasmuch as we could do this more easily than make an exact analysis of his. But they do almost entirely correspond with his, else we should not have adopted this mode. Yet the reader will obtain from him a fuller development of his opinions and also many particulars, both theoretical and practical, which our limits do not permit us to go into.

The fourth paper in this book is on *balsam of Copaiva*, and occupies fifteen pages. We are glad to see this valuable medicine brought into notice by so respectable an author. We have for several years employed it in gonorrhœa and in some cases of hemorrhoids, particularly when these are attended by bleeding; and in this last disease we were led to it by Cullen's recommendation. We have also sometimes employed it in chronic catarrh, where there has been a great secretion of mucus. The same has been done by some others, but perhaps it has not been employed so generally as it deserves to be in these cases.

Dr. Armstrong first speaks of its use in *gonorrhœa virulenta*. In this disease he says it is "generally a speedy and an effectual

curative in the primary as well as the last stage." He thinks that it will not fail once in twenty cases of this disease in the male subject if it is pure and is properly administered. In the female it is not so constantly successful; "though even in the latter it is superior to every other drug, in conjunction with cleanliness and injections." In the male he very justly reprobates the use of injections.

That this medicine may produce the effects promised, the first object is that it be pure. It is often adulterated, and it is injured by age. It is good, when it has its own peculiar fragrance and taste, when "of the consistence of oil, and in colour and transparency not unlike fine rum."

"Even when pure, copaiva is apt to disagree with the stomach, sometimes inducing nausea, retching, vomiting, or disagreeable eructations. It imparts to the urine a bitter taste, and a peculiar smell, but not of the violet kind, like the turpentes. In moderate doses it is a mild laxative, in large ones it often occasions copious and fluid discharges of fecal matter, but generally without uneasiness. When exhibited in excessive doses; it may excite a sort of vibratory feeling in the brain, or cause a febrile anxiety, with a mental disturbance bordering on delirium. When it disorders the stomach much, its exhibition is sometimes followed by an eruption resembling the nettle-rash; and in a few peculiar habits I have seen this eruption arise where little or no affection of the stomach apparently existed." p. 351.

The mode of administering this medicine may be varied to suit the taste of the patient. It may be dropped on water, or on sugar; and though the patient then has the full strength of it, this mode is preferred by some persons. It may be made into an emulsion by triturating it with either mucilage of gum arabic, or with the yolk of a fresh egg, and then adding gradually, while the rubbing is continued, water alone, or sugar and water.

The first dose of this medicine may be thirty or forty drops, and this should be given twice a day. The dose may be increased until the object is effected, that is, until the disease begins to yield, unless the medicine offend the stomach, or act too powerfully on the bowels. Indeed in this last case the inconvenience may be remedied by adding a few drops of tincture of opium. In some instances Dr. Armstrong says the doses must be increased to four or five drachms in twenty-four hours. In these instances it must be divided into three, or more doses. For ourselves we must say that we have seldom found patients, who could bear more than fifty or sixty drops for a dose; but it may be given three or four times in a day.

Dr. Armstrong considers it necessary that this medicine be regularly administered for a week, or ten days, after the disease

has disappeared. If not, a relapse may be "confidently anticipated."

"From the remarkable efficacy of *copaiva* in an acute inflammation of *one* membrane, we might ask," says Dr. Armstrong, "has it a similar power over a similar affection of *every* mucous membrane?" Although we should guard against a disposition to generalize too confidently, the question is worthy consideration, and some experiments might be justly made to answer it. This is still more justifiable from the known good effects of the article in some catarrhal affections. Some of these the author has stated in the paper on pulmonary consumption. On these grounds he now suggests a trial of this remedy, as an auxiliary in croup. In spasmodic asthma and chin-cough he thinks that he has seen it useful. In protracted dysentery, so far as the mucous membrane of the intestinal canal is alone affected, he thinks this balsam might be beneficial; and he states that in chronic diseases of this kind, where there has been some ulceration of the mucous membrane, he has seen it very much so. He has also used it with advantage in some cases of leucorrhæa.

These observations from an author so well entitled to credit, coming in confirmation of the ancient character of this medicine, will justify a trial of it in diseases of the mucous membrane generally. In making this trial however it would not be justifiable to omit the use of those means, which experience has already sanctioned; and especially this is to be remembered in a disease of so much danger as the croup.

The fifth and last treatise in this volume is on "chronic diseases and sulphureous waters." In this Dr. Armstrong gives us the outlines of a theory in respect to chronic diseases. This we shall briefly state and then make some remarks on it.

"Between chronic and acute diseases, a much nearer affinity perhaps exists, than has usually been conjectured. The first stages of both consist in disordered action, the last generally in deranged structure. If high degrees of venous or of arterial fulness mark acute diseases, low degrees of the same conditions mark chronic diseases: in reality these degrees may mutually pass into each other, so that an acute disease shall become chronic, or a chronic disease shall assume an acute character; and whoever has accurately marked the progress of the symptoms will be especially satisfied, that few chronic diseases exist without the supervention of an attack more or less acute. Though chronic congestion of the veins, and chronic excitement of the arteries, will not account for all the varied phenomena of chronic diseases, yet as the one or the other of these states is almost invariably present in such affections, and forms a material part of their pathology, a few pages shall be dedicated to the consideration of each." pp. 365, 366.

“ Whenever venous congestion exists as the cause of chronic disease, in the end it mostly occasions an increased action of the heart and arteries ; but this increased action is frequently imperfect and irregular for a considerable period, so that there is fever at one time, and collapse at another, and between these two states the health is suspended. In fact, whenever the increased action of the heart and arteries is permanently established, then the venous congestion may be said to terminate in a new disease ; *since an increased action of the heart and arteries is one of the natural cures of venous congestion, and an augmentation of the secretions is the other.*” p. 371.

In reviewing Dr. Parry's great work on pathology (see this Journal Vol. VIII. p. 348,) we stated our opinion that Dr. Parry had not taken into consideration sufficiently this doctrine of venous congestion. We feel satisfied that it is a doctrine to be regarded as much, as that of increased momentum, both in explaining many symptoms of disease and in deciding on the method of cure. But we have the same general objections to this doctrine in the extent, to which it is carried by Dr. Armstrong, that we have to the doctrine of increased momentum in the extent, to which it is carried by Dr. Parry. And it is proper to remark that we would not insist upon our objections, if we did not believe that either of the doctrines above-mentioned, or the two combined, if pushed their full length, would lead to consequences, which their friends would disapprove quite as much as we do.

We hold then that increased momentum of the blood in the arterial system, and undue accumulation of it in the veins are in very many, we think in most instances, effects of previous disease in the extreme arterial vessels. Before discussing this subject further let us consider for a moment the character and functions of these extreme vessels. And first they are the most essential and important parts of the vascular system. They are the great artificers in all organized beings, and all other parts of every vascular apparatus may be considered subservient to them. We have reason to believe that they are to be found in every part, in every point of every organized being. The organs, from which they derive their supplies, are various ; but they may be supposed to have essentially the same structure, the same vital powers, and to perform offices of the same general description wherever they exist. These offices are the formation of the various solids and secreted fluids. They do this from the common nutritive matter, whether this matter has been prepared in a stomach, as in animals, or in a vascular apparatus too minute for examination, as in vegetables. They may receive this common nutritive fluid almost directly from the stomach, as we apprehend they must do in hydatids ; or it may be prepared in one complicated apparatus and be distributed through another, as in

the most perfect animals. Each animal has an apparatus for assimilation and distribution, adjusted to its own particular character and condition; but, however various may be the organs by which these functions are performed, it is obvious that they only prepare and distribute the material on which the extreme arteries act. In this sense then the digestive and circulating systems may be said to be subservient to these extreme vessels. But it will be urged that changes in the quantity and motion of the blood, and in the distribution of it, must modify the action of these vessels. No doubt this is true to a certain degree; but we think that changes of the kind mentioned may take place to a very considerable degree and the extreme vessels not be affected; whereas any considerable change in the functions of those vessels will always operate at once on the heart and circulating system, and most frequently on the digestive organs also.

To offer proofs in support of these statements would extend this article too far; those who will reflect on the subject may easily find such proofs. Generally impressions are first made on the extreme vessels and propagated from these to the larger vessels, or to the heart.* But let us for a moment consider such cases of venous congestion, as come most under immediate inspection. This happens in diseases, which we call surgical more frequently than in those, which fall under the care of the physician. If we look among the sore legs in a hospital, we find in some instances the great veins of the whole limb enlarged, and in most of them an undue distention of the small veins near the ulcer. Here is venous turgescence; and this turgescence is a great obstacle to the cure; but it obviously is not the primary disease. The primary disease is in the extreme vessels, and this has given rise to the venous turgescence. It has happened, it is true, under the influence of bad habits; but it is connected with the ulcer as a principal cause. If we look at a cancerous ulcer, we find a similar turgescence following a disease of the extreme vessels. About an eye, which has been the seat of chronic inflammation for some time, we find a similar enlargement of veins; although this happens in veins of a smaller size, than in the cases above described. In many instance we see a similar distention of the veins in diseases of the internal fauces; and this is the most of an internal part, which we are able to examine during life. No doubt the same thing must happen in some cases, where the mucous membrane of the stomach and bowels are affected, and so also where the disease commences in the extreme vessels of other structures, as on the serous, or the

* See our review of Parry, Vol. VIII. before cited.

cellular membrane in any of the viscera. In certain states it will happen more readily than in others; as at the commencement of those acute diseases, in which there is a sudden and violent prostration of all the vital powers; and also in chronic diseases, in which the disease itself, or the bad habits of the patient have exhausted the same powers. In all these cases the venous congestion will embarrass the cure, and it may be necessary to devote the principal attention to the removal of it; but it is not the whole disease. On the contrary the removal of the primary disease must often be the first object, and sometimes it is in this way only that the congestion can be removed. Lastly, we shall not deny that there are instances, in which the venous congestion may be the whole disease, as we sometimes see to be the case in varicose veins of the leg. Though even here we very often find the primary difficulty to be, not indeed a disease of the extreme arteries, but some mechanical obstacle to the circulation.

We think that the mode, in which a cure is often effected both by nature and by art, is accordant with our views of the subject. In cases, where there is venous congestion with inflammation, it is not enough to produce evacuation; the disease is not fully relieved, until the state of the extreme vessels is altered, as indicated by a change in the secretions. It may happen that evacuation in any mode may mitigate the disease; a relief from congestion may be essential to the removal of primary disease; but something more must take place before the patient becomes well. Accordingly it often happens that we relieve the urgent symptoms, but the disease not being cured, those symptoms frequently recur, and that because the increased momentum of the blood, or the venous congestion are brought back by new accidents. This may be seen in diseases of the skin, of the eyes, &c. where the original disease is perceived to continue during the periods of mitigation; and the same state of things is most undoubtedly frequent in diseases of the brain, of the lungs, of the liver, &c.

We are persuaded of the advantage of regarding those general causes, which exercise an influence in a variety of diseases; and think Drs. Parry and Armstrong have thrown great light upon them. But we are not willing that too exclusive an influence should be attributed to those causes, while others are acting parts as important perhaps, though not always as conspicuous, as they are.

Having ventured to offer this criticism upon a favourite doctrine of an author whom we respect most highly, we proceed to give an account of the work under review. "Chronic congestion of the veins," says Dr. Armstrong, "generally occurs in the brain, in the liver, in the spleen, or in the vicinity of the heart."

The symptoms arising in each case are distinctly stated by him. We are particularly pleased by the description of the effects arising from venous congestion in the brain.

He remarks that spontaneous evacuations often relieve chronic congestions, and that these evacuations take place mostly through the skin, kidneys, or lungs. It is by the same passages he says that relief is obtained from the daily plethora induced in many *civilized* persons by too much eating and drinking. The copious secretion of urine in cases called *nervous* operates, he supposes, as a cure by taking off plethora, and thus the patient is saved from palsy, or apoplexy. From his observations on this head he is led to one important practical remark, in the justice of which we fully accord, in whatever way its importance is to be supported. This is that in chronic diseases the greatest watchfulness is requisite, whenever the secretions from the skin and kidneys are materially diminished.

Venous congestion occurs more among sedentary persons, than among the active. It is promoted by cold and especially by variable weather. A residence in vitiated air, bad provisions and filth are other causes of the effect in question, as Dr. Armstrong has often observed among the miserable poor in the crowded alleys of London. Under this head he is led to make useful remarks on the importance of a proper mode of warming and ventilating houses; and then follows this paragraph, which we quote not for its novelty, but because it will be the more regarded as coming from a man of character and experience.

“ One of the great secrets for the preservation of health in large towns is to take plenty of exercise in the open air: this remark is peculiarly applicable to London, where most of the sedentary are very sickly looking, and where most of those who are much in the air appear as healthy as in the country; but this is especially the case with children, and therefore exercise abroad is a point to which parents should constantly attend in the metropolis.” p. 377.

In respect to the following extracts we make the same remark as in respect to the preceding.

“ Many persons in the higher circles are troubled with what are popularly denominated stomach complaints; and it is well known how untractable they are under the tonic plans of treatment, which are usually pursued. But the truth is, that these diseases generally are combined with chronic inflammation, or with increased actions of a chronic nature; and therefore it is irrational to expect, that they can be removed by means directly tending to aggravate the very cause from which they proceed. The manner in which persons of the higher ranks take exercise, the stimulant drinks and diets which they use, the unseasonable hours which they keep, all tend to disorder the digestive and hepatic functions, and, through them, to

affect the brain and its membranes ; and therefore the seats of those disorders, which are so commonly supposed to be of the nervous class, are to be found in the head, in the stomach, in the liver, or in some other important organ. Carriages are extremely convenient, and even necessary, for those who have certain duties to perform which require dispatch, and they are also excellent protections against the influence of our bad climate at certain seasons of the year ; but to make them, as is generally done, a sort of daily vehicle for exercise, is preposterously absurd, as if nature had almost made our moving powers in vain. As walking is the natural exercise, so it is unquestionably the best for those desirous to maintain strength and health at the same time ; and carriages should be appropriated to those invalids who stand in need of fresh air without fatigue, and to those individuals whose time is valuable, or whose frames are too feeble always to stand the shocks of our coldest seasons. It would be a great improvement in our domestic habits, if the second courses at dinner were abolished, among the higher ranks of people, as they generally induce them to eat more in quantity and in quality than is requisite or salutary. In fact, in the first course of dishes there is far too much variety ; and it is unnatural to expect, that the digestive powers can accommodate themselves to such a mixed farrago of materials. If we look throughout nature, we shall find, that all living creatures, excepting man, exist on a very simple fare ; and the result is, that while his life terminates at all ages, theirs is usually lengthened out to the latest date of their respective genus, when left in a state of nature. In examining the bodies of those animals killed in the chase, which have now and then fallen in my way, I have hardly ever found any chronic disorganization about their vital organs ; but in examining some of those who had been domesticated, and consequently had partaken of our complicated and unnatural diets, organic disease was found in almost all of them." pp. 385—387.

" The drinking of wine at dinner in the higher circles is a fashion that might be well dispensed with : indeed it is a sort of initiation into tippling, not only among men, but also females." p. 389.

" If any thing be calculated to render a human being miserably dependant, it is the habitual use of opium." p. 390.

" Some most distinct cases of palsy and of apoplexy have fallen under my observation, which arose from too large, or too often repeated doses of opium." p. 391.

" Next to the abuse of opium in this country, I would rank that of calomel, a medicine far too much given in chronic, and far too little in acute diseases." p. 392.

" When patients are convalescent from acute diseases of venous congestion, or of arterial excitement, it is an established rule among many practitioners, to allow them a generous diet ; and some go even further than this, as they prescribe wine and what are called

tonics, with the hope of more rapidly recruiting the strength. It is not intended in these pages to insinuate any thing against others, for this was the practice which I once pursued myself; and it was from observing its bad effects in many instances, that I was led, generally, to abandon it, and to substitute one more consonant and salutary to the system." p. 394.

The critic, who compares the work under review with our extracts, might at first inquire why we omit to notice the many excellent passages on the diagnosis of different chronic diseases. But a little more attention would show him that they cannot easily be abridged, although they might perhaps be arranged in a better method, and that they are too numerous and too long to be extracted. While however we pass over so much that is valuable, we cannot refrain from stopping to remark on the use of a word very common among medical men at the present day, but, as it has seemed to us, not always employed with sufficient accuracy. The word we refer to is "*action*," and we believe that it was brought into common use by John Hunter; but that the philosophical precision, with which he employed it, has not been generally regarded. In the follow-extract it will be seen that Dr. Armstrong points out a case, in which the word should not be used according to the common acceptance, which is that of motion or mechanical operation in some organ.

"When the secretion of any organ is increased, we say that the action of its arteries is increased, yet this does not legitimately follow; for the action of an artery is one thing and its secretion another. p. 413.

We should say the mechanical action is one thing and a secretion is another; but that the secretion is an action of its arteries. We conceive that Mr. Hunter used the term in a very general sense. We see various effects produced in living bodies, both in health and in disease, while the agents producing them are so minute, that they cannot be investigated by our senses. Thus in secretion we know that the blood, or some portion of it, is exposed to the influence of the minute vessels, to which it is carried, and that a secreted fluid is discharged different in its character from the blood, or any thing contained in it. Here Mr. Hunter would say some action has taken place, not meaning thereby to attribute the change in the fluid to any mechanical operation of the organs, through which it has been transmitted; nor attempting to decide in what way the vessels have operated on the fluid. He would mean to say, that as the effect would not be produced without some cause, or agent, as the fluid has been exposed only to minute vessels, the form of which indeed is not

determined, these vessels must be the agents and have performed an action. In the case of a morbid secretion, the same language would be used. A similar explanation would be given in the case of the growth of the solid organs; and the same may be extended to cases of extraordinary growth, as in the tumor of inflammation and in the formation of encysted tumors. Thus the swelling of a rheumatic joint, and the production of a scirrhus, as well as the secretion of variolous matter, would be called morbid actions. An action then, when spoken of as occurring in a living body, may be an operation known to be mechanical, although performed by vital power, such as the contraction of a muscle; or it may be an operation performed in some unknown mode, by which chemical changes are produced different from such changes occurring in dead matter. We say different from those, because there is every reason to believe that the chemical changes in living bodies are not effected by the mixture of two substances not previously in contact; but that they are effected by some agency of the solid organs upon elements previously in intimate mixture or combination. Our object is only to explain the sense, in which the term action seems to us to have been used by Mr. Hunter, in reference to a known agency exercised in an unknown manner. We do not therefore go on to inquire whether these solid organs operate in these cases by a galvanic power, or by a power peculiar to living beings. We mean then to say that an increased vascular action may be an increase of mechanical action, as when the pulse become more frequent; or an increased chemico-vital action, as when a secreted fluid is poured out in great abundance, or when a solid organ is increased in bulk.

In the treatment of chronic congestions the following question must always arise, shall we attempt to relieve the distended vessels by evacuation, or by applying a stimulus to excite an increased action of the heart and more forcible contraction in the distended veins? It is true that there is one other mode, when the diseased part is so situated as to be affected by a bandage; for here the mechanical support is a powerful means of producing relief without the aid of either evacuation, or general stimulants. But this mode cannot be adopted in the grave diseases of internal parts. In answering the question above proposed, Dr. Armstrong makes this general statement.

“ If chronic congestion of the veins exist in a person, whose general powers are only oppressed, the debility is not real, but apparent, and the consideration of it must not be allowed to stand in the way of moderate depletion; but on the contrary, if chronic congestion of the veins exist in combination with the real debility attend-

ant upon exhausted powers, then the congestion might be increased by depletion, and a fatal collapse would probably succeed. Again, if the chronic congestion of the veins has been of long continuance, its treatment requires considerably more nicety, than when it has only been of comparatively short duration: for when it has continued a long time, the debility may be real, and there may also be some co-existent derangement in the structure of the part affected." p. 378.

In proceeding to speak of the treatment more in detail he favors the plan of evacuation under considerable debility and even in pale, spare subjects, when the powers are not greatly exhausted. In such cases he begins with "one or two small general venesections" and follows these by a mild course of purgatives. He supports the patient meanwhile by a light nutritious diet, and occasionally by small portions of diffusible stimulants. But he warns against the free use either of food, or of stimulants; because he conceives the system to be in a state, in which great excitement of the heart may very readily induce new disease. Under a course of evacuations the best evidence of benefit is afforded, when the pulse rises; while the sinking of the pulse, unless quite momentary, must warn us to abstain from repeating them. In these delicate cases Dr. Armstrong advises a regular course of the *Harrogate sulphureous water*, so as to keep the bowels gently open, the tepid bath occasionally and fresh air. He states under this head the great benefit often produced by a change from the town into the country. The advantage of this change we very well know by experience; but we do not attribute it entirely to the difference in the air, but to the greater freedom, with which the invalid exposes himself to the external air in the country, than in town.

We shall at length close our notice of this book by some more extracts; remarking that we have left unnoticed many pages as valuable, if not more so, than those we have quoted, and that this is among the best of the practical books of the present age. If it be said that we have made remarks somewhat similar on many other books, we answer that in general we confine ourselves in our reviews to works, which we think worthy of such commendation.

"Wherever chronic inflammation may be internally seated, the treatment is to be regulated by the same or similar principles; but in the application of these principles we must never fail to make allowances for peculiarities of age, of previous and present habits, of constitutional discrepancies, and so forth. Most frequently, small or moderate venesections should be first tried from the larger veins; and these should be followed up by local bleeding, blistering, purga-

tives, rest, and an antiphlogistic regimen: but where success does not attend these measures, small doses of calomel or of the blue pill may be prescribed until the system be slightly affected, and then, for the most part, they should be suspended, and the laxative plan continued. With a few exceptions, short or mild courses of mercurials have seemed to me far more beneficial than long or severe ones in chronic inflammation; and this has been especially observable when they have been used in combination with the Harrogate sulphureous water, a remedy whose purgative and alterative powers shall afterwards be explained. But in every instance of chronic inflammation the greatest attention should be paid to the diet; for unless it be strictly antiphlogistic while the symptoms continue unsubdued, very little advantage is to be expected from any remedial plan. In many cases, which were deemed to depend upon weakness of the stomach, I have seen the most decided benefit from a very spare diet; and that, too, where a contrary one had been tried to maintain the strength, which it in fact diminished, by irritating and oppressing the stomach. What is called dyspepsia, is often a symptom attendant on diseases of the brain or of the liver; and when that is the case, it can only be removed by removing the original diseases: but when dyspepsia is an idiopathic affection of the stomach, it is very frequently connected with a low degree of inflammation of that organ; and then small bleedings, repeated blisters to the epigastrium, with purgatives, an occasional blue pill, and a spare diet, will constitute one of the best plans of cure. If dyspepsia be attended with frequent retchings, or vomitings, fasting for some hours now and then has frequently an excellent effect; and indeed in most chronic cases where the stomach is irritable, nothing tends to restore its tone sooner than the rest which occasional fasting affords to its functions." pp. 425, 426.

"Mercury has been universally esteemed the most powerful alterative which has ever been used; and most practitioners are now convinced that its efficacy, in acute as well as in chronic affections, depends upon its action on the secretory organs. Now in the sulphureted hydrogen gas, we have another agent which acts as powerfully as mercury on the secretory organs; but with this difference, that while the long continued use of the latter, in chronic diseases, generally breaks up the strength, that of the former generally renovates the whole system. The sulphureted hydrogen gas, then, has a decided superiority over mercury in chronic diseases in general; and this is not a speculative opinion, for I have proved its correctness in numerous instances by the test of experience." p. 487.

SELECTIONS.

Researches on the Pathology of the Intestinal Canal. By JOHN ABERCROMBIE, M.D. Fellow of the Royal College of Surgeons of Edinburgh.

[From the Edinburgh Medical and Surgical Journal.]

AFTER all that has been written on this subject, the pathology of the intestinal canal still presents an interesting field of investigation. When we consider the delicacy of the structure, its great extent, and the important functions which it has to perform, we expect to find its diseases numerous and dangerous, and in their nature often obscure and intricate. Externally it is a serous membrane, and liable to the diseases incident to that particular stricture; internally it is a mucous membrane, and liable to the diseases of mucous membranes; and it is, besides, through its whole extent, a muscular organ, upon the healthy action of every part of which it constantly depends for the proper discharge of its functions. It is six times the length of the body to which it belongs, and connected with it there are the delicate organs concerned in digestion and absorption, which have diseases peculiar to themselves.

The acute diseases of the intestinal canal seem to arrange themselves under two heads. (1.) Diseases affecting it as a muscular organ, or derangements of its peristaltic motion. (2.) Inflammatory diseases. Under the former division, we are led chiefly to the important subject of Ileus; under the latter, to a class of diseases, which, though they agree in the general characters of inflammation, vary remarkably according to the particular structure in which they are seated, the serous, the mucous, or the muscular coats. The organic diseases, and several chronic affections of the intestines, are so connected with one or other of these leading classes, that the consideration of them must be very much combined.

PART I.

Of the derangement of the Peristaltic Motion of the Intestinal Canal.

THE peristaltic motion of the intestinal canal consists of a series of alternate contractions and dilatations, to which nothing

analogous exists in any other part of the body. In regard to the various conditions of the muscles concerned in it, there are several circumstances that deserve particular attention.

When healthy intestine is empty, it seems to contract entirely, so as to assume the appearance of a solid cord, white and corrugated. Nearly the whole tract of intestine may occasionally be seen in this state in the bodies of infants, who before death had been much-purged, or had been affected with diarrhœa without disease of the coats of the intestine. A portion of intestine, again, that has been the seat of inflammation and gangrene, though it may be empty, does not contract in this manner, but falls flat, presenting a broad surface like an empty bag. (See Case 4th.) The contraction, therefore, in the former case, is a muscular action which is lost in the latter; it is that property of muscles, by which they contract when nothing opposes their contraction. It has been called by physiologists the tonic power of muscles: it is not a mere shrinking by elasticity, but a muscular action of great power, as may be seen on the surface of the body, in the force with which muscles contract when their antagonists are paralysed.

When intestine is thus empty and contracted, it is probable that the muscular fibres are at rest; and the presence of some contents is probably required to bring into action the peristaltic motion. One portion of the canal then contracts upon the matter contained in it, propelling it forward into another which is thus distended, and then contracts in its turn, propelling the contents forward into a third portion, and so on. Now various actions take place in this process. When a portion of intestine, which I shall call No. 1., propels its contents forward into a portion, No. 2., which is supposed to be empty, it must contract with such force as not only to propel the contents, but also to overcome the tonic contraction of No. 2. Again, when No. 2. contracts and propels the contents into another portion, No. 3., by what power are they prevented from returning backwards into No. 1.? It is probable, that though No. 1. and No. 3. are both in a state of contraction, they are nevertheless in a different condition, No. 3. being contracted merely by its tonic power, and No. 1. retaining, besides this, a degree of the actual force with which it had lately contracted in propelling the contents into No. 2., and being thus in a state less liable to be distended than No. 3. There are also circumstances which render it probable that relaxation to a certain extent takes place in the fibres of the lower part, while the peristaltic motion is going on in the

healthy manner.* Thus in the healthy condition of the parts, the motion is propagated downwards, not perhaps in the simple manner which I here suppose, but in a manner sufficiently analogous to it, to answer the purpose of this illustration. In the actual condition of the function in a healthy body, a part does not probably empty itself at once, but by a succession of contractions, propelling forward its contents in small portions. There are other circumstances also by which the action is complicated, but they do not affect the case which I have given as an illustration, and which is perhaps precisely, or nearly that which occurs under the action of a purgative, and in certain diseases of the canal in which its action is morbidly increased.

Now this process is entirely a muscular action, and there are various circumstances by which it may be deranged. When the portion No. 1., for example, has contracted and propelled its contents into No. 2., if this does not contract in its turn, the matters will lodge in it as in an inanimate sac, and the process will be interrupted: the same will take place, if No. 2. does not contract with such power as to overcome the tonic contraction of No. 3. If No. 2., again, contracts with its regular power, while there exists some obstacle to the dilatation of No. 3., the contraction will dilate No. 1. instead of No. 3, and the action will be inverted. A remarkable example of this will be found in Case 19th, in which the action was propagated downwards, till it reached the extremity of the colon, where it was inverted by an organic cause impeding the dilatation, and thence regularly propagated upwards till it terminated in a fit of vomiting, a certain proportion of the contents, however, being continued downwards, and discharged by the rectum in the natural way.

The causes, therefore, which may interrupt the peristaltic action, are principally referable to two heads. (1.) A part having its muscular power destroyed or weakened, so as to render it incapable of acting in unison with the other parts. (2.) A part being, from some cause, incapable of that degree of dilatation which is necessary for enabling it to propagate the action. Let us consider briefly each of these cases.

I. Suppose that the series of contractions and dilatations have gone on through successive portions of intestine, which I shall call Nos. 1, 2, 3, 4, and 5, and that No. 5 has its muscular power so diminished, as to be incapable of dilating No. 6.; an interruption will take place, and an accumulation of matter in No. 5. The healthy parts above are still acting, and propelling additional

* See Mr. A. Cooper's account of the phenomena observed in a case of artificial anus. *Treatise on Hernia*, page 38.

matter into No. 5., and if by this additional stimulus it shall be excited to contract with additional force, the interruption will be removed. If not, the healthy parts above will be excited by the interruption to increased contraction, and one of two consequences will probably follow. No. 5. being considered as an inanimate sac, by the increased impulse from above, the matters may be forcibly driven through it, so as to distend No. 6., and so continue the action, allowing No. 5. to contract and recover itself; or, if it fail in this, the increased impulse will only tend to increase the distention of No. 5. until it is distended beyond its power of contraction, or paralysed from over distention. Thus, I conceive, is formed a paroxysm of simple ileus, and the effects vary according to particular circumstances. From the part thus diseased, the action may be inverted and communicated upwards, or if the healthy parts above are loaded with contents, they may be thrown into still more violent action downwards. If this action should still fail in restoring the natural course of the function, the parts will be exhausted in their turn. The dilatation will extend to No. 4., and the parts above continuing to act, this also will be distended beyond its power of contraction, and so on. The appearances on dissection in fatal ileus correspond with these conjectures. The lower part of the canal is found empty, contracted, and healthy. This terminates abruptly at a certain point, and is succeeded by a portion distended to the greatest degree, loaded with feculent matter and flatus, in some cases quite thin and transparent, in others inflamed and gangrenous. From this portion, the distention is traced upwards, sometimes to the very commencement of the canal. The immense quantities of gas which are found in the distended intestine in these cases, are probably separated from the stagnant matters contained in it, and, not being thrown off, must prove a powerful cause of distention.

II. Suppose the series of contractions and dilatations to be propagated downwards as before, and that, from some cause, No. 6. is rendered incapable of the same degree of dilatation as the other parts, though without being by any means actually obstructed.—The effect here will vary according to circumstances. From the state of the action in general, and the usual quantity of contents, it may happen that, in ordinary cases, no greater degree of dilatation is required than No. 6. is capable of transmitting, and the process will go on without interruption. But if, from an increased quantity of contents at a particular time, or an accidental accumulation of flatus, a greater degree of distention shall be communicated to No. 5. than No. 6. is capable of, then an interruption will take place in No. 5. in the

same manner as in the former case,—and the parts above continuing to act, it will be in danger of being over distended. The interruption may be temporary,—may frequently take place, and be soon removed, until at length, from some cause which eludes our observation, it terminates in perfect ileus. This form of the disease is strikingly illustrated in Cases 9 and 10, in which it is to be particularly observed, that there was no mechanical obstruction. In such cases also, it is to be remarked, that a certain quantity of the contents may pass through, as occurred in Case 19, and probably in Case 9. In Cases 9 and 10, the cause was evidently of long standing. Cases 11 and 12 exhibit remarkable examples of the affection from causes of a more recent kind. This form of the disease may also arise from organic contractions of a mechanical nature, as in Cases 13 and 14, in which the contraction had gone on, producing little inconvenience, until it terminated at length in fatal ileus. This modification of the disease may also be fatal by gradual exhaustion, without perfect ileus, as in Cases 19 and 20.

In this manner, I conceive, is formed the paroxysm of ileus. The farther progress of the affection varies in different cases. After a certain period, the parts may recover their healthy relations, and the disease be removed,—or it may continue till an extensive portion has been paralysed by over distention, and the case probably becomes irremediable. There is reason to believe, that it may in this state be fatal, without farther disease; but the common progress of it is to inflammation and its consequences. We cannot explain this phenomenon; but we know, that all parts that are rapidly distended are liable to inflammation. We see it in the inflammation which attacks the distended urinary bladder, and the integuments covering certain tumours which have increased rapidly. We see the converse in the remarkable effect of collapse of the cornea in relieving inflammation of that organ.

The opinion which I have proposed in regard to the pathology of ileus, differs considerably from a doctrine which considers this disease as originating in spasm. According to this system, the parts which on dissection are found contracted, are supposed to be contracted by spasm, and, consequently, to be the primary seat of the disease. Many considerations induce me to doubt this hypothesis.

1. Though all muscular organs may be considered as liable to spasm, I think it very doubtful whether such fibres as those of the bowels are really affected by it in such a degree as to prove a cause of disease. Our knowledge of the pathology of such muscles must be derived chiefly from the urinary bladder, as this organ admits of a more correct knowledge of its condition

under disease than any other internal muscular organ. Now, we are familiar with a state of the bladder in which it is distended beyond its power of contraction; but we have no reason to believe, that it is ever spasmodically contracted so as to resist distention. We talk of spasm of the stomach; but if the stomach were contracted by spasm, in the manner which this hypothesis supposes in regard to the intestines, its cavity would be so much diminished that very little could be received into it. But, instead of this, we find persons labouring under the affection which has received this name, swallowing hot water and other liquids in large quantities.

2. Spasm, even in powerful muscles, is generally of short continuance, and it is very uncommon to find it continuing for such a length of time as this hypothesis supposes. The only example, perhaps, is in trismus, in which very powerful muscles are concerned. It is certainly very doubtful whether such fibres as exist in the intestinal canal could contract with such force, and continue in powerful contraction for so long a time as would be required to constitute an attack of ileus.

3. A great extent of intestine, perhaps the lower half, may occasionally be found in this contracted state. It is not probable that such an extent should be at once contracted by this powerful spasm; and that the whole of this portion is not contracted by spasm, appears from the facility with which, in many cases, it admits of large quantities of fluid being thrown in by injection.

4. In fatal ileus, which has been going on for many days, the contracted portion may be still found perfectly healthy, the morbid appearances, inflammation, adhesion, ulceration, and gangrene, being entirely confined to the distended portion.

5. That the distended part is really in a state of paralytic inaction, is probable, from the remarkable case (Case 12) in which the disease was seated so low, that the contracted part could be fully dilated by mechanical means, but without relieving the disease.

6. That spasmodic contraction is not the primary disease, is probable from many cases in which there is really no obstruction, but the bowels are freely moved at various periods of the complaint. (See Cases 1, 3, 8, and 9.)

From these considerations I am induced to believe that, in simple ileus, the proper seat of the disease is the distended portion,—that this portion has lost its power as a muscular organ, being distended beyond its power of contraction, and that the contracted part (which has probably been emptied by injections) is kept in that contracted and quiescent state by its tonic

power, and the suspension of the action from above, by which, in the healthy condition of the parts, it would have been distended.

VARIETIES OF ILEUS.

It is probable that the morbid action at the commencement of an attack of ileus, is a derangement of the relation in muscular action, betwixt one part of the intestinal canal and another immediately adjoining, with which it ought to have acted in concert. When we endeavour to investigate the manner in which this derangement may take place, we find the disease appearing under three modifications.

1. Simple Ileus, without any organic affection.
2. Ileus, proceeding from an organic affection, but of such a nature that it acts by deranging the muscular action, without mechanical obstruction.
3. Ileus with mechanical obstruction.

SECT. I.—*Simple Ileus.*

Simple Ileus is to be viewed as the disease of a muscular organ, and originating in derangement of muscular action. The leading appearances which the fatal cases present to us are, one part of the intestinal canal empty and contracted, and another part highly distended. In attending farther to the phenomena of the disease, the following varieties deserve our attention.

I. The disease may be fatal in this state of over distention, without inflammation.

CASE 1.—A man, aged 40, (a shoemaker,) had been for some time affected with slight symptoms which were referred to the liver. On the 25th of August 1814, he was seized with an attack resembling cholera, which, after some medicine that was given him, was speedily succeeded by the usual symptoms of Ileus. He had severe pain of the abdomen; urgent vomiting; and costiveness; his pulse was generally about 96, and at last rose to 120. The pain was at times increased by pressure, but not uniformly so. He was twice bled, and the other usual remedies were employed without avail. He died on the 30th. I saw him for the first time on the 30th, when he was moribund. His bowels had been freely moved by medicine on the 29th.

Dissection.—The lower part of the right lobe of the liver was unusually soft. The only other morbid appearance was a con-

siderable part of the intestinal canal in a state of great distention, without inflammation.

This is perhaps an unusual termination of the disease in adults, but I believe infants are frequently cut off in this manner, by the mere interruption of the healthy action of the intestinal canal.

II. The disease may be fatal with recent inflammation, without gangrene, or any of its other consequences.

CASE 2.—A woman, aged 20, (23d June 1813,) was affected with violent pain of the upper part of the abdomen and towards the left side, at times increased by pressure, and varying considerably in its degree of severity; frequent and violent vomiting; obstinate costiveness; belly tumid and tense; tongue white; pulse 76, and rather small. On the 16th she got wet during the flow of the catamenia, which ceased, but returned at night; pain about the umbilicus began on the 17th, and increased gradually; vomiting began on the 21st, with hiccup.

Blood-letting; blistering; various purgatives; injections; warm baths, &c. were employed by a physician of eminence.

24th. Incessant screaming from the violence of pain; every medicine vomited instantly; pulse 88, and rather small; frequent hiccup; pain increased on pressure; no stool.

25th. No stool; pain almost gone; every thing vomited; pulse very feeble.

26th. No stool; free from pain; vomiting continued, with hiccup. Died in the night.

Dissection.—The whole of the colon, and about 12 inches of the lower extremity of the ileum, were empty, contracted, of a white colour, and seemed perfectly healthy. The remainder of the small intestine was distended to the greatest degree, and appeared thin and transparent. It contained chiefly watery matter and air. On the surface of the distended part there was in several places considerable inflammation, especially at the lower part, near the contracted portion. These parts were of a vivid red colour, without any tendency to gangrene, and without exudation. There was a small abscess in the left ovary; the stomach, liver, &c. were healthy.

III. The disease may be fatal with extensive inflammation and gangrene.

CASE 3.—A young man, aged 19, (17th October 1813,) was affected with violent pain round the umbilicus; incessant vomiting; abdomen hard, tense, and a little tumid; bowels obstinately costive; pulse 84; countenance depressed and anxious;

had been ill six days, during which a variety of remedies had been employed without relief.

In this severe case, every variety of practice was employed in the most active manner; repeated general and topical bleeding; blistering; various purgatives and injections; tobacco injections; cold applications; cold injections; crude mercury, &c. &c.

18th. Pulse 120; no relief; belly tympanitic; some feculent discharge by injections; urgent vomiting, but not feculent.

19th. Pulse 112; symptoms rather abated; some feculent evacuations.

20th. Pulse 92 to 96; symptoms aggravated; belly much swelled; every thing vomited almost instantly; pain continued violent; some evacuation of watery matter.

21st. Pulse not to be felt at the wrist; in the humeral artery it was 80 and regular; violent pain; no stool; great depression. Died an hour after the visit.

Dissection.—The stomach was healthy. Almost immediately below it, the intestine was distended to the greatest degree, in some places quite thin and transparent; in others highly inflamed and gangrenous, bursting when handled; in other places firm, though perfectly black. This state of disease continued to the middle of the small intestine, where a portion 12 inches in length was empty, contracted, and in its appearance quite healthy. Below this the canal was again diseased as above, distended, inflamed, adhering, and gangrenous, until three inches from the termination of the ileum, when it became suddenly contracted, empty, and white; but this and the other contracted portion were perfectly pervious, easily dilated, and in their coats quite healthy. The colon was healthy and collapsed, except at the lower part, where it contained some consistent feces; the other viscera were sound. The diseased portion of intestine was chiefly distended by air. It contained in some places thin feculent matter, but in no great quantity, and no consistent feces could be found in any part of it.

CASE 4.—A boy, aged 12, (26th October 1813,) was affected with violent pain of the belly, chiefly around the umbilicus, vomiting, and some degree of swelling of the belly; pulse 50, soft and regular. Had been ill two days, during which he had had no stool. Various remedies were employed without benefit. 27th. Pulse 120, pain increased, with tension of the belly and tenderness on pressure, had only vomited once. Blood-letting was used in the morning, and again at 3 P. M. after which the pulse fell to 112. The other usual means were employed without procuring any stool; the pain continued unabated; the pulse rose

again to 120, and became extremely weak, with coldness of the body ; and he died between seven and eight o'clock in the evening, having continued in violent pain until immediately before death. I did not see this case during the life of the patient. I was present at the examination of the body. *Dissection.*—The stomach was sound, the small intestine was a little distended and slightly inflamed, especially at the lower part, where it had contracted some adhesions. The whole right side of the colon, was in a state of gangrene, especially the caput cæcum, which had burst and discharged into the cavity of the peritonæum a large quantity of fluid feces. The diseased parts appeared to have been much distended, and, after being emptied by the rupture, had not contracted, but had fallen flat, presenting a very broad surface like an empty bag. At the upper part of the ascending colon, this diseased part terminated at once in healthy intestine, white, collapsed and empty. This was the state of the remainder of the colon, except the sigmoid flexure, which, with the rectum, contained much consistent feces.

The causes of simple ileus are not well ascertained, and the operation of them is involved in considerable obscurity. It is probable, that they may be referred to two heads: 1. The presence of substances which oppose some resistance to the propelling power of the canal. 2. Causes which diminish the muscular power of a part of the canal, itself. 1. The action of the former is illustrated by those cases in which ileus has been distinctly traced to the presence of a large biliary calculus, or other concretion in the intestine. Some of these cases have been fatal, and, on dissection, the usual appearances of ileus have been found above the seat of the concretion. In others, after violent symptoms of several days continuance, the extraneous body has been expelled with immediate and complete relief.* It is probable that masses of indurated feces, and indigested articles of food, may act in this way as a cause of the disease. One severe case which I am acquainted with, seemed to have been induced by a large quantity of nuts, which had collected into a mass in the bowels, and were at length discharged, with relief of all the symptoms. If one portion of the canal were in that state of dilatation which precedes its contraction, and this contraction were impeded by a cause of this kind lodging in the portion immediately below, while the healthy parts above were forcibly propelling new matters downwards, it is, I think, easy to conceive how the former part might become over-distended, in the manner which I have conjectured to constitute ileus. 2. The causes

* See a Case by Mr. Thomas, *Med. Chir. Trans.* Vol. VI. p. 93.
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of the second class are more obscure, and perhaps still more founded in conjecture. We know the uneasy feelings that are produced by an accumulation of gas moving slowly through the bowels, distending one part after another, in the affection which is called flatulent colic. The distended part in this case can often be felt externally, so as to be ascertained to be the seat of the pain; and it is sometimes so firm and tense, that I have more than once seen it mistaken for a mass of organic disease. In a short time, perhaps in a few hours, it is gone. Now, were a distending cause of this kind, in its progress through the canal, to arrive at a part, the muscular power of which had been impaired, it is, I think, easy to conceive how this part might be distended to a degree from which it could not contract,—the consequence, I imagine, would be an attack of ileus. That this is a real disease of muscular fibres of this kind, we know from the effect of distention of the bladder, and we know also, that when the fibres have been once weakened by such an attack, it is liable to occur again from a smaller degree of distention than that which originally induced it. On the same principle, a person who has suffered an attack of ileus is often for a considerable time liable to violent attacks of pain in the abdomen, upon any irregularity in his diet, want of attention to his bowels. What are the causes that may weaken the muscular power of a part of the intestine in the manner which I here suppose, we know not with certainty; perhaps cold is one of them. All muscles are liable to the rheumatic inflammation, and we see that it not only diminishes their power, but, in many cases, produces perfect paralysis; and even without the rheumatic state, cold is capable of directly paralyzing muscular fibre. Perhaps another of these causes is over-excitement. We see ileus supervene upon cholera, and upon diarrhœa which has been attended with much irritation, especially in old people. But, without speculating farther on this point, I think we have much reason to suppose, that many cases of ileus are connected with a certain predisposition in the state of the parts. In what a different manner these may be affected by the same cause, is strikingly illustrated by the two following cases. In the one, a mechanical cause of some continuance produced violent symptoms, which ceased whenever the cause was removed. In the other, a similar cause of short continuance was followed by ileus in its most violent form.

CASE 5.—A gentleman, aged about fifty, was affected with pain of the abdomen, urgent vomiting, and obstinate costiveness; the abdomen was tumid and tense; the pulse natural. He had been in this state for three days, during which a variety of remedies had been employed without benefit. On examining the groin, I

discovered a hernia the size of a pigeon's egg, which was soft, and not painful, and was reduced at the first touch. A laxative injection being then given, operated freely, and all his symptoms were relieved immediately.

CASE 6.—A woman, aged about thirty, on 10th October 1814, was suddenly seized with umbilical hernia, which protruded to the size of an egg, and was accompanied by severe pain across the upper part of the abdomen. I saw her about two hours after the appearance of the hernia, and it was very easily reduced, but the pain of the abdomen continued, and various purgatives and purgative injections were given without benefit. Without detailing the particulars of the case, it is sufficient for my present purpose to state, that it turned out to be ileus in its most violent form, which resisted the most active treatment for six days, and then terminated favourably, by perseverance in the usual remedies.

In these two cases, the cause was the same, and a corresponding interruption took place in the muscular action of the intestine; but in the one, this was recovered from as soon as the cause was removed; while in the other, it is probable, that a part of the canal had been injured in its muscular action in the manner which I have already alluded to, as calculated to give rise to an attack of ileus.

There are various circumstances in the history of ileus which favour the opinion, that a portion of the intestine is for a time deprived of its muscular action, and reduced to the state of an inanimate canal. When the disease is beginning to give way, the first discharges are generally watery; and we frequently see fluid matter discharged of such an appearance as gives every reason to believe that it had come from the higher parts of the canal, and in such quantity as leads us to suppose that the bowels must be emptied. Yet after this, the patient who has been taking very little nourishment, and chiefly liquid, begins to discharge, and often continues for days to discharge, quantities of indurated feces that are almost incredible, and which must have been lodging from the commencement of the disease. This can only be accounted for by supposing, that a portion of the canal had been distended, and incapable of action; that there the hardened feces had lodged, while fluid matters were driven through by the action of the healthy parts above, but that the hardened matter was not discharged till this part itself had recovered its muscular power.

Another circumstance, which I think can only be explained on the same principle, is, that there is a modification of the disease, in which there is no obstruction, but, by the usual purgatives, liquid stools can be procured through nearly the whole course of

the disease. Recovery in these cases is sometimes accompanied by immense discharges of hardened feces, which must have been lodging from the commencement of the attack.

CASE 7.—A lady, aged 35, (3d December 1813,) was affected with vomiting, and pain over the whole abdomen, which was rather tense and painful upon pressure. Pulse rather frequent. She was bled and blistered, and took laxative medicine, which operated freely, bringing off thin feces of a natural appearance. After another bleeding, on the following day, she became much exhausted, her features shrunk, her pulse feeble, and of extreme frequency; laxative medicine, which had been given again, brought off fluid feces. She now took wine in large quantities for three days, and, under this treatment, she gradually recovered from the state of exhaustion, and the pulse came down in frequency. An injection given on the 7th operated freely; and, on the 9th, she took castor oil, with which she began to discharge hardened feces in the most extraordinary masses, and in immense quantity. This discharge continued spontaneously for four or five days, and the whole quantity discharged was almost incredible. On the 15th she was well.

This modification of the disease may be fatal without obstruction.

CASE 8.—A gentleman, aged about 40, (16th November 1812,) was seized with vomiting and pain of the left side of the abdomen, his pulse varying from 40 to 60; took purgative medicine, which operated fully; and on the 11th, the vomiting had subsided, but the pain continued severe, and was more general over the abdomen; pulse 70.—12th. A tympanitic swelling appeared on the left side of the abdomen, which, on the 13th, had extended also to the right side; violent pain continued; pulse natural. On the 13th, he took purgative medicine, which operated fully four or five times. On the 14th, he was free from pain, but the swelling had extended over the whole abdomen; pulse still natural. On the 15th, the pain returned with great violence, with vomiting, and frequent pulse. It continued violent through the day and night, and he died early on the morning of the 16th. The body was not examined; but, from a case considerably similar, which is related by Morgagni, I think it probable that the distended parts had run rapidly to gangrene.

SECT. II.—*Ileus, with Organic Disease of such a Nature that it acts by interrupting the Muscular Action of the Intestine, without Mechanical Obstruction.*

CASE 9.—A gentleman, aged 24, had been, for several years, liable to violent attacks of pain in the abdomen, chiefly affecting

the right side. The attacks usually continued a few hours, and were very uncertain in their recurrence; sometimes they returned every evening for weeks together, and sometimes he was, for weeks or months, perfectly free from them. One of his longest intervals was ascribed to taking daily a small dose of Epsom salt. On the 11th of June 1818, he suffered one of these attacks, which came on in its usual manner, and affected him with violent pain across the lower part of the abdomen, which was drawn into balls; no vomiting; pulse 60; pain alleviated by lying on his belly across the edge of his bed. Was seen by an eminent practitioner, who gave him an opiate and a purgative with relief; bowels freely moved; 12th, was better, but felt weak; 13th, walked out, but at night the pain returned with violence; pulse 60; an opiate was given without relief. At four o'clock in the morning of 14th, pain continued unabated; pulse 108; was bled to 3 xii. and injections given, by which his bowels were moved freely, four times; at 9 was found pale, cold, and exhausted, and pulse scarcely to be felt; but there was still severe pain in the abdomen, which was a little tympanitic, but not tender to the touch. He died at two P. M. I saw him two hours before death. *Dissection.*—The small intestine was greatly distended, and, on many places, especially on the ileum, there were inflamed portions, with effusion of coagulable lymph, and others of a dark colour, approaching to gangrene. The greatest inflammation was at the very extremity of the ileum. The right extremity of the colon was singularly turned upwards upon itself, towards the outside, so that the surface of the caput cæcum was in contact with the surface of the ascending colon, and a firm adhesion had taken place between them, about two inches in extent. The adhesion was very firm, and was evidently of long standing; the parts immediately concerned in it appeared to be a very little thickened; the colon and the caput cæcum were in other respects quite healthy, and without any vestige of inflammation; other viscera healthy.

CASE 10.—A man, aged 63, had been affected with double inguinal hernia for 40 years, both of which were easily reducible, and he had been for many years liable to violent paroxysms of pain in the abdomen, during which the herniæ were generally “forced out.” He suffered one of these attacks more severe, and longer continued than usual, in November 1812. It began with shivering and nausea, with pain in the abdomen, and continued with various remissions and aggravations. He had been able to walk out about a week before his death, but was never free from pain in his bowels. During this attack, the ruptures had protruded frequently, but he always reduced them with ease

till the morning of the 29th, when he failed. They were, however, readily reduced by a gentleman who then saw him, but at night, when I saw him, they had again protruded. They were easily reduced, but protruded again almost immediately, though he was lying on his back. He had some vomiting, but not urgent; violent pain over the abdomen, which was tender and extremely hard; pulse 120, and irregular; features collapsed; bowels had been freely moved by injections. Died in three hours after the visit.

Dissection.—Both ruptures were completely reduced, and without any adhesion to the sacs. The sacs were considerably thickened; the mouths of them were large and free; the inner surface of the sac of the left side was inflamed and sloughy. The small intestine was, down to the middle of the ileum, greatly distended, and, in many places, inflamed and gangrenous. The disease stopped at the part of the ileum which had formed the hernia of the right side; the surfaces of this portion, which had been in contact in the hernia, had formed a firm adhesion to each other, about three inches in extent. At this place, the coats of the intestine were somewhat thickened, but so as to produce very little diminution of its area, and it was otherwise quite healthy.

CASE 11.—A boy, aged eight, was affected with frequent vomiting and obstinate costiveness; his belly was swelled and tympanitic, but without much pain or tenderness; he was pale and emaciated; his pulse frequent and feeble; he had been ill for ten or twelve days. The complaint had begun with severe pain and diarrhoea; this was succeeded by costiveness, which, for seven or eight days, had resisted every remedy; for the last two days every medicine had been vomited; his exhausted state left little room for active practice, which indeed had been fully tried before; in two days more he died. *Dissection.*—The small intestine was distended to the greatest degree, down to a point in the ileum, where the following cause of the disease was discovered. Between two turns of intestine, there was a narrow band of adhesion, rather more than an inch in length. It was evidently of long standing, and, while the parts had remained contiguous, had produced no bad effect, but by some relative change of situation of the parts, another turn of intestine had insinuated itself between the two adhering portions. This portion, however, was healthy. The effect appeared to be, that the band of adhesion being thus put upon the stretch, the peristaltic motion had been interrupted. At the lower attachment of the adhesion, the intestine was drawn aside into “puckers,” and precisely at this point the distention ceased, and the canal be-

came white, empty, and collapsed. At this point, however, there was no obstruction, and the coats of the intestine were perfectly healthy, except a circumscribed redness on the inner surface, at the point corresponding with the attachment of the band of adhesion. On the distended intestine there was slight appearance of superficial inflammation, but it was of small extent, and appeared to be quite recent.

CASE 12.—A man, aged 60, (23d April 1815,) was affected with vomiting; pain of the abdomen, which was swelled and tympanitic; obstinate costiveness; pulse 108, and soft; countenance pale and exhausted; pain not increased by pressure; had been ill a week, during which powerful remedies had been employed without benefit; had formerly had two attacks of the same kind, one of which continued a week. This man lived in great distress till the 28th, without any remarkable change in his symptoms. The swelling of the abdomen increased gradually, until it resembled that of a woman at the most advanced period of pregnancy, yet to the last he could bear pressure upon every part of it. His pulse varied from 108 to 116: his death was sudden; he had been out of bed, and dressed the day before, and in the morning of the day on which he died he did not appear worse than usual. Every powerful remedy was employed, without the slightest benefit. *Dissection.*—On opening the abdomen, a viscus came into view, which appeared to be the stomach enlarged to three or four times its natural size. On a more accurate examination, this turned out to be the sigmoid flexure of the colon, in such a state of distention, that it rose up into the region of the stomach, and filled half the abdomen. The stomach was contracted and healthy. The small intestine was healthy at the upper part, lower down it became distended, and of a dark colour; at the lower part it was very much distended, with some spots of gangrene. The colon was greatly distended; in some places it was not less than five or six inches in diameter, and terminated in the distended sigmoid flexure already mentioned; the rectum was healthy and collapsed; the sigmoid flexure was of a dark livid colour, and contained air and thin feces. What appeared to be the cause of this affection remains to be mentioned. The enlarged sigmoid flexure was found to have taken a remarkable turn upon itself, so that what was naturally the right side of it lay to the left, in contact with the descending colon, and the left, or ascending part of it, lay on the right. The consequence of this was, that the rectum, as it descended from the former, passed down behind the lower, or first turn of the sigmoid flexure, where it first takes the turn from the descending colon; also the rectum itself, at this part, received a twist as if

half round. Exactly at the point where this twist was, the distention and dark colour of the intestine terminated abruptly, and it became white and collapsed. At this part, however, there was no mechanical obstruction, for the parts were pervious, and, except the twist, perfectly healthy; and farther, it happened in this singular case, that I had an opportunity of ascertaining the state of them during life. On the 25th, three days before his death, having exhausted all the ordinary means, I was induced to examine the rectum with a large ivory-headed probang, and I found at a certain depth, (which was afterwards found to correspond with the point where the rectum was twisted,) a slight obstruction to the passage of the probang; however, it passed up with little difficulty, and was withdrawn without any. A piece of the intestine of an animal tied at the end was carried up beyond this point, and then strongly distended by injecting water into it. In this distended state it was retained for some time, and then slowly withdrawn; but no discharge followed it, though, as I have already mentioned, the distended part contained only air and fluid feces.

To this part of the subject are to be referred the well known cases of very small herniæ, which include only a small portion of one side of the intestine. I have seen several of these, and I have a preparation from a fatal case, in which the strangulated portion is not above one third of an inch in depth, and in diameter like the point of the little finger, the area of the intestine, except this little portion, being quite free. The symptoms and the morbid appearances were precisely similar to those in the cases already mentioned; the intestine above the hernia being greatly dilated and highly inflamed, with some portions gangrenous, and, below the hernia, empty, collapsed, and healthy.

The cases which I have described under this article appear to me to be of considerable importance, and to throw some light upon the pathology of ileus. The disease in all of them was distinctly referable to a cause which was obvious on dissection, and yet the cause was such as produced no mechanical obstruction. This was most remarkable in Cases 9 and 10, in which the cause was evidently of long standing, and in Case 12, in which there was an opportunity of fully dilating the contracted portion, three days before the death of the patient. In these cases, then, the seat of the disease must have been the distended portion. We have seen it existing without inflammation, and the only idea we can form in regard to the nature of the primary disease, I think, is a muscular organ distended beyond its power of contraction. The paroxysms which had often occurred in Cases 9 and 10 were also remarkable. It is probable that, while the

intestinal contents were in small quantity, and the action extremely moderate, the diseased portion was able to act in concert in the natural and healthy manner, but that, when a certain greater degree of dilatation took place in the parts above, a corresponding dilatation could not be communicated downwards, and an interruption occurred which occasioned the paroxysms of pain. The over distention, in these cases, was after a certain time removed, until at last, from some cause which eludes observation, it took place in a greater degree, which was not recovered from, but, passing into inflammation, was fatal. In Case 11 it is worthy of observation, that the mere distention was fatal; the appearance of inflammation being so slight and recent, that it could not be considered as the cause of death.

SECT. III.—*Ileus, with Mechanical Obstruction.*

On this part of the subject, I shall do little more than relate a few remarkable examples; and they are referable to three heads, contraction of the intestinal canal,—*intus susceptio*,—and internal hernia.

CASE 13.—A man, aged 70, a tailor, had complained for several weeks of a deep-seated pain, referable to a particular spot at the lower part of the abdomen; but it was not so severe as to prevent him from following his usual occupations. On 27th July 1815, he was seized with violent pain of the belly, vomiting, and costiveness; on 28th, belly became swelled, tender, and tympanitic; pulse natural; 30th, some feculent discharge was procured; pulse about 100. Died rather suddenly on 31st.

Dissection.—The whole of the small intestines, and the colon, were in a state of uniform distention, and of a dark colour. The distention stopped at the second turn of the sigmoid flexure, before it turns down to terminate in the rectum. Here the intestine was for about an inch and a half very much thickened in its coats, and its area was so diminished as scarcely to admit the point of the little finger. The inner surface of this portion was covered with red fungous excrescences, like granulations; much feculent matter was collected above this place. There was no adhesion in the other parts of the intestine, nor any appearance of active inflammation; but a dark leaden colour was nearly uniform over the whole it.

CASE 14.—A woman, aged 60, had complained for some time of frequent uneasiness in her bowels, with flatulent distention.—27th August 1817. Uneasiness increased; no stool for four days; but no violent symptoms. From this time, she resisted

every remedy, but still without any violent symptoms; the belly became gradually more and more enlarged, but there was no fixed pain, only occasional griping; no fever; no tenderness, and little vomiting. She died on 4th September, having lain for the last three days in a state of extreme lowness, with coldness of the whole body. *Dissection*.—The whole tract of the intestinal canal was prodigiously distended, and there was, in several places, recent inflammation, with exudation of coagulable lymph. The disease extended to the rectum, about four inches from the anus, where the intestine was so contracted as scarcely to admit the point of a small finger. Behind this spot, there was a mass of diseased glands, and the contraction was occasioned by a firm flat substance, which was connected with this mass, and crossed the intestine in front. This being cut through, the intestine was set at liberty, and its coats were sound.

CASE 15.—A woman, aged 22, (9th November 1818,) while sitting dressing her child, was suddenly seized with vomiting, and pain at the stomach; the pain soon after moved downwards, and fixed, with great severity, in the region of the head of the colon; the whole abdomen became painful and tender.—10th, Urgent vomiting, violent pain over the whole abdomen, with frequent paroxysms of aggravation which produced screaming; abdomen tender; pulse 120, very small and feeble; countenance extremely faint and exhausted. Died on the 13th, without any particular change in the symptoms.—*Dissection*.—Small intestine greatly distended, with a slight blush of redness in some places. About three inches from the lower extremity of the ileum, there began an inversion of the intestine, to such an extent, that more than 18 inches of the ileum had passed into the cavity of the caput coli. The inverted parts were much diseased, inflamed, and gangrenous, and some portions were reduced to the state of a soft pulp. At the commencement of the inversion a portion was much thickened; the colon was healthy; there was some effusion in the abdomen.

CASE 16.—A boy, aged two years and five months, (7th May 1812,) was seized with vomiting, pain of the lower part of the belly, and tenesmus, with which he passed small quantities of bloody mucus, and some pure blood. He was hot and restless, and his countenance was anxious and depressed; pulse very frequent; abdomen, to the touch, natural. On the 8th, while straining at stool, a tumour, of a dark bloody colour, protruded from the anus to the bulk of an egg. It was easily reduced; but, on examination by the finger *in ano*, was distinctly ascertained to be inverted intestine, and a probang being carried up, passed to a great depth by its side, without reaching the commencement of

it. Various unsuccessful attempts were made to restore it to its natural situation. The child died on the morning of the 9th. *Dissection.*—A most remarkable inversion of the intestine was discovered, which began at the middle of the arch of the colon, and the parts concerned in it, including the remainder of the colon and a corresponding portion of the ileum, when freed from the inversion; measured 38 inches. The part that had protruded at the anus was the inverted caput coli. The inverted portion of colon was of a dark livid colour, very soft, and, in some places, thickened. The portion of ileum included within this was healthy; a portion of omentum was also included, besides a considerable extent of mesentery. The other intestines were slightly inflamed, and there was some serous effusion in the abdomen.

I have seen another case, exactly resembling this in its symptoms, and differing from it only in the extent of the inversion, which began at the lower part of the colon. The patient was a boy aged about four years, and he survived five or six days.

CASE 17.—A girl, aged 17, (5th July 1818,) was seized with violent pain in the belly; vomiting; obstinate costiveness; pain increased by pressure; pulse frequent. Various remedies were tried without benefit; pain continued; belly enlarged. I saw her on the 9th; the belly was then enormously enlarged; very tense, and tender; no evacuation; pulse 140, and weak; features collapsed; died at night.—*Dissection.*—The small intestine was much distended and inflamed; and, in several places, had burst and had discharged much thin feculent matter into the cavity of the abdomen. At the root of the mesentery, on the right side, and on a line with the head of the colon, there was a mass of diseased glands, the size of a large egg. To this mass, the appendix vermiformis had contracted a very firm adhesion by its apex, and as it stretched across from the caput cæcum to the mass of glands, it left beneath it a space which admitted three fingers. In this space a turn of intestine, about six inches in length, was strangulated and gangrenous.

CASE 18.—A man, aged 28, (15th August 1815,) was suddenly seized with pain of the belly and frequent vomiting. 16th. Symptoms continued, with hiccup; pulse natural; no stool. 17th. Symptoms abated, but no stool; pulse natural. 18th. Severe vomiting and hiccup; features collapsed; a good deal of pain, but not increased by pressure; pulse 90; died in the night.—*Dissection.*—There was a hard mass of considerable size formed by disease of the mesentery. To this mass several turns of intestine had contracted adhesions of long standing, and, at these points, the coats of the intestine were much contracted by

bands of adhesion, and the cavity diminished; at one point, it would only transmit a directory. At one place, a portion of intestine adhered to the diseased mass at two points, leaving betwixt them a space which admitted a finger; in this space, a small portion of a contiguous turn of intestine was strangulated. In the upper part of the small intestine, before these adhesions commenced, there was distention and gangrene; below, it was healthy, except several narrow bands of adhesion in several places betwixt contiguous turns. About two years before his death, this man had been for some months in very bad health, being affected with a deep-seated pain in the abdomen, want of appetite, great weakness, and emaciation. He went to the country, and got well. After that time he enjoyed tolerable health, except two attacks of pain of the belly, and vomiting, which were of short continuance; the second was about a fortnight before the fatal attack, and was relieved by a dose of castor oil.

The following case differs from these examples of ileus. I add it here as a remarkable example of inverted peristaltic motion.

CASE 19.—A man, aged 53, a marble-cutter, (May 1814,) was affected with vomiting and uneasiness in the bowels, which attacked him in the following manner: The attack commenced with a sense of commotion, or, as he termed it, “a working,” which began at the very lower part of the belly, and rather to the left side. It moved gradually upward till it reached the stomach, and then he vomited every thing that he had taken since the last attack. He was attacked in this manner at uncertain intervals, several times every day, and the complaint had continued about a fortnight. He had been for 15 years affected with a small hernia of the left groin, which often came down, but was easily reduced. He had used a truss, for the first time, a few weeks before he applied to me. From that time his hernia had never appeared, but very soon after he applied the truss, the above mentioned complaint began. There was no fixed pain in the belly; his pulse was natural; his bowels costive, but not obstructed. A variety of remedies were employed without benefit. For a month after I saw him first, he continued to attend to his work. He was then confined to his house, and soon after to bed, with increasing debility and emaciation, without any change in the complaint; his hernia never appeared; his pulse was generally natural; his bowels were easily kept open; his belly, to the touch, quite natural, rather collapsed, except at times, when a circumscribed hardness was to be felt in it, but this was not always felt in the same place, and often not felt at all. He was liable to violent paroxysms of pain in the abdomen, which affect-

ed sometimes one part of it, sometimes another, and he died of gradual exhaustion, about ten weeks from the commencement of the vomiting. *Dissection.*—The hernia was found to have been femoral; a portion of the sigmoid flexure of the colon adhered to the mouth of the sac, and a fine ligamentous band, connected at its extremities to the mouth of the sac, surrounded the intestine at this spot, but without producing a great degree of constriction,—the area, to the extent that the band admitted of its dilatation, being free, and the coats of the intestine healthy. There was intus-susceptio of considerable extent in two places of the small intestine, and the lower end of the ileum was inflamed. The colon was collapsed; the pylorus was hard, and a little thickened; the inner surface of the stomach, at the pyloric extremity, was considerably eroded.

The following case exhibits another modification of the symptoms.

CASE 20.—A woman, aged 63, enjoyed tolerable health, till within three months of her death. She then had vomiting and costiveness for a week, and was relieved by purgatives. She then complained of nausea without vomiting; no pain; the belly was at first tumid, but afterwards subsided. After a month she was confined to bed, but complained of nothing except constant nausea, and increasing debility and emaciation. Bowels very costive; no organic disease to be detected. She had repeated attacks of vomiting, which sometimes continued for several days. In the intervals she lay without complaint, except nausea and want of appetite, till she died of gradual exhaustion. Her bowels had been kept open by injections, purgative medicine being vomited. *Dissection.*—There was a great thickening and induration of the coats of the ileum at its termination in the colon, which so narrowed the opening, that it only admitted the point of the little finger. The ileum was distended and dark-coloured, the other viscera healthy.

On a review of the whole phenomena of ileus, as they are presented to us in these cases, there are various principles, pathological and practical, which seem to result from them. Some of these may be considered as legitimate conclusions; others I submit for farther investigation.

1. It is probable that the morbid condition which constitutes ileus, is the distention of a portion of the intestinal canal beyond its power of contraction.

2. It is probable, that, when a considerable extent of the canal has fallen into this condition, it may in that state be fatal without farther disease.

3. The usual progress of the unfavourable cases is to inflammation and its consequences; and we have seen the disease fatal, while the inflammation was in various stages of its progress, from a slight blush of recent redness to extensive mortification. Farther, we have seen remarkable varieties in regard to the period of the disease when the inflammation appears. It seemed to be quite recent in Case 2d, which was fatal on the 9th day, and in Case 11th, which was fatal about the 13th. On the other hand, in Case 4th it had passed on to extensive gangrene on the third day.

4. It is probable that ileus is not necessarily connected with obstruction of a part of the canal, for we have seen it occur without obstruction, and in connection with causes which did not seem calculated to produce obstruction; and in one case we have seen the obstructed part dilated by mechanical means without relieving it.

5. Ileus does not appear to be necessarily connected with feculent accumulation, or with any condition of the contents of the canal, for we have seen it fatal while these contents were of a natural appearance, almost entirely fluid, and in very small quantity.

6. Pain of the abdomen, increased upon pressure, does not appear to be a certain mark of inflammation. It occurred in Case 1. where there was no inflammation, and in several other cases at an early period, before probably the inflammation had commenced. From various observations I am satisfied, that intestine which has been rapidly distended, is painful on pressure; it is, however, a kind of pain which by attention can in general be easily distinguished from the acute tenderness of enteritis.

7. Cessation of the pain, and great sinking of the vital powers, are not certain indications of gangrene; for in Case 2d these symptoms were connected with recent inflammation; and in Cases 7th and 21st, they were recovered from. To this important subject I shall have occasion to refer more particularly when I come to the subject of enteritis. I shall then mention several cases in which recovery took place where the symptoms usually considered as indicating gangrene had occurred. On the other hand, in Cases 3d and 4th, in which there was extensive gangrene, the pain continued violent to the last.

8. The pulse appears to be rather an uncertain index of the condition of the parts in ileus. In Case 2d, in which there was considerable inflammation, it was less affected than in Case 1st, in which there was none. In Case 14th there was neither frequency of pulse nor tenderness of the belly, though there was

inflammation, with exudation of very considerable extent. Other interesting circumstances in regard to the pulse may be remarked in the cases. One of the most important is in Cases 4th and 9th, which were fatal, with extensive inflammation and gangrene, within eight or ten hours after the time when the pulse was first observed above the natural standard.

9. In cases of Ileus, we must be cautious of forming a favourable prognosis from the appearance of feculent evacuations. These, we have seen reason to believe, may occur while the disease is going on to a fatal termination, and much feculent matter may lodge in the lower part of the intestine which is healthy, and may be brought off while the disease above remains unchanged.

10. Organic disease of considerable extent may exist in the bowels without giving rise to any urgent symptoms, until at length, from some cause which eludes observation, it suddenly produces fatal ileus. Cases 13th and 14th.

11. On the other hand, such organic disease may be fatal without ileus. Cases 19th and 20th.

OUTLINE OF THE TREATMENT OF ILEUS.

If the principles which I have proposed in this paper shall be considered as worthy of any credit, it will follow, that ileus is not an accumulation to be forcibly removed, nor an obstruction to be forcibly overcome, but a muscular organ to be restored to its healthy action. In the treatment there would be three distinct objects of attention,—the part which is distended beyond its power of contraction,—the healthy part above,—and the healthy part below, which is contracted and empty. Those principles, however, I only propose at present for further investigation, and do not presume to think them so established as to be applied to the treatment of ileus. But there are some points in regard to the treatment which present a most interesting field of investigation, and on which I would propose a few observations. One of the most important of these relates to the use of purgatives in ileus, and the question, Whether, in every case, the use of active purgatives be advisable? The action of purgatives must be chiefly and primarily upon the healthy part of the canal above the seat of the disease; and the important question, in regard to this portion, is, Whether, in every case, it requires to be excited; or whether there are not modifications of the disease in which its action is already as great as can be desirable, and

even some, in which it might be moderated with advantage? The violent tormina occurring in paroxysms, which we observe in many cases of ileus, certainly give reason to believe, that there is not any deficiency of action in the higher intestines, but rather a violent action, resembling that which is produced by a purgative,—a strong though ineffectual effort to overcome some interruption to the healthy action of the canal. Now, if a part of the canal be really in a state of inaction from over-distention, and if the action of the healthy part above fails in relieving it in the manner which I have already supposed, may we not conceive a case in which it is actually increasing it,—in which, by propelling new matter into the distended part, it is presenting an obstacle to this part recovering its healthy action. In such a case, might not benefit be obtained from allaying the action of the upper part, instead of increasing it? I think there are circumstances in the history of ileus which give some probability to this conjecture. Several of the remedies which are beneficial, are such as are calculated to allay muscular action; among these may be reckoned blood-letting, cold applications, and tobacco injection; and I have seen a severe case of ileus yield in a few hours after the use of a full dose of opium, which had for several days resisted the most active remedies. I by no means intend to say, that this principle is applicable to every case, but, from the whole phenomena of ileus, I do suspect, that there are most important differences in the circumstances of the disease in different cases; particularly that there are some cases in which the upper part of the canal requires to be excited; others in which its action is already sufficient for every purpose that it can be supposed to answer; and some in which it may even require to be moderated. I think there is also some reason to suppose, that, in the cases which require the use of purgatives, there are important differences in the degree of excitement that is adapted to each,—that in some, the most active medicines are requisite, while in others, the mildest in very moderate doses, produce that beneficial action, which, by a stronger excitement, would be defeated. These remarks are not entirely hypothetical. The most accurate observers have often been heard to remark, that there are facts in the history of ileus which seem to be totally at variance with our ordinary ideas in regard to the action of purgatives,—that very mild medicines seem, in many cases, to answer better than the more active,—and that the beneficial result sometimes follows the very mildest in very small doses, after the most powerful in immense quantities have been given in vain. I am aware of a source of fallacy which is inseparable from such observations, but I conceive they are by no means to be disregarded.

ed ; and when we add to them the fact, that a full dose of opium is sometimes followed by the result which we have sought for in vain from the most powerful purgatives, I submit, whether the whole phenomena of the disease do not give considerable probability to the principles which I have proposed. In regard to the use of purgatives, I suspect, that the best practice in general is to give mild medicines in moderate doses, repeated at very short intervals, while, at the same time, we keep in view, that the use of purgatives is but a part of the treatment, and that the main object is to remove, if possible, that condition of the canal, as a muscular organ, by which purgatives are prevented from producing their usual effects. Every one, indeed, must have experienced, that, in regard to the use of purgatives, there is a point in the treatment of ileus when he is often brought completely to a stand, when he is convinced that it is in vain to urge them farther, and is led to look around for remedies calculated to act upon some other principle. Important remedies of this kind are blood-letting, blistering, and the effectual application of cold, either externally, or by glyster ; but, as far as my observation extends, the remedy of most general utility is the tobacco injection. It should be begun with caution ; perhaps for an adult in the quantity of 15 or 20 grains infused in four or six ounces of hot water. After the interval of an hour or two, it may be repeated in a quantity a little larger, until such effects are produced by it, viz. slight giddiness and muscular relaxation, as shew that it is exerting its proper effect upon the system. It may then be repeated at proper intervals a great many times, if the case do not yield. With these precautions I have given it in states of great nausea and exhaustion, with the effect of diminishing instead of increasing them, and, in one case, to a child three years of age, with the happiest result. In one of the most severe and obstinate cases I have had occasion to treat, it was repeated nearly twenty times with various partial effects, and at length with complete success. The obvious effect of this remedy upon the system, is to produce relaxation of all muscular parts, and the mode of its operation in ileus is involved in considerable obscurity. I have supposed, that, in this disease, the upper part of the canal is healthy, sometimes in strong action,—that a part below this is inactive from distention,—and that the lower part is healthy and contracted, being kept in that contracted state by its tonic power, and the suspension of the action by which, in the healthy state of the parts, it would have been distended. A certain force is, indeed, acting upon it by the propulsion of matters from the upper part, but this acts with little effect after being communicated through the intermediate portion, which is in the

state of an inanimate canal. It is, therefore, unable to overcome the tonic contraction of the lower part, which thus opposes an obstacle to the parts recovering their healthy relations. The same observation applies, if we suppose, that the distended part itself retains some degree of action, though feeble and imperfect. Now, in this state of the parts, could the tonic power of the lower part be for a time considerably diminished, it might perhaps be brought, as it were, more into unison with the other parts,—might be dilated in the natural manner by the weakened force which is acting upon it,—and the parts might thus be enabled to recover their healthy relations. Is this the action of the tobacco injection?—It is mere conjecture, and I urge it no farther. I add the following case, illustrating the effect of this remedy in a state which seemed to be nearly hopeless, and exemplifying an important fact to which I have already alluded,—that symptoms resembling those of gangrene may be recovered from.

CASE 21.—A woman, aged 20, (17th November 1813,) was affected with violent pain in the right side of the abdomen, and obstinate costiveness; pulse natural; had been ill three days; used purgative medicine and injections with some relief.

18th.—Pulse 96; urgent vomiting; pain of abdomen violent; was bled and blistered, and purging injections repeated.

19th.—Pulse 120; no stool; no relief; pain violent over the whole abdomen; urgent vomiting. Was bled again; various medicines given without effect; every thing was vomited. Towards the afternoon, the pain nearly ceased, with collapse of the features, and coldness of the surface; pulse 140, and very weak; vomiting continued; appeared to be moribund. Wine was now given, about a glass every hour. After a few hours, her appearance being improved, the tobacco injection was given at first in small quantity, and it was repeated several times. It did not increase the sinking, but seemed rather to abate both it and the vomiting; wine continued.

20th.—Pulse improved; some scanty evacuations; tobacco injection given several times with partial effect; vomiting abated; some Epsom salt was retained, and operated; free from pain; pulse 96.

21st and 22d.—Continued to improve; pulse 80; bowels kept open by small doses of Epsom salt. From this time continued well.

I have already alluded to the effects of blood-letting, and the application of cold. In the state of collapse produced by a full bleeding, I have repeatedly seen the disease give way so suddenly, that there was no time to raise the patient out of bed.

If there are symptoms indicating inflammation, this remedy of course must be urged in the most decided manner. In regard to the remarkable effects of cold, I refer to a valuable paper by Mr. Smith of Kingussie, in the 9th Volume of this Journal, page 287. Of the other remedies that have been proposed, I have had little experience. Crude mercury in doses of lb. i. or more I have tried in several cases. In some of them, it appeared to abate the vomiting. I have not observed any other effect from it, and I am not convinced that the principle on which it is given is correct. In the Memoirs of the Medical Society of London, Vol. II. some remarkable cases are described, in which the forcible injection of fluid to the extent of six or eight pounds, was used with advantage.

Whatever practice is employed ought to be zealously persevered in, notwithstanding the most unfavourable appearances; for the disease has been known to resist for a long time the most active remedies, and yet terminate favourably, as late as the 17th day.

An Account of some Alarming Symptoms caused by Spiculæ of Bone in the Stomach. By JOSEPH M'SWEENY, M.D.

[From the Edinburgh Medical and Surgical Journal.]

ALTHOUGH the power of digestion has been found capable of subduing very hard substances, yet the human stomach, which often with difficulty digests solid articles of food, may be found sometimes incapable of acting on so solid a substance as bone. Even where the power of the organ is capable of acting on such a substance, in some cases so long a time may be necessary, that the foreign body may be productive of serious consequences. It is not to be inferred, that every substance difficult of digestion, or indigestible, is kept from passing out of the stomach. Daily experience shows, that the pylorus does not keep so strict a guard. Different indigestible substances have passed through the alimentary canal; even articles of food have passed unchanged. No doubt, pieces of bone of an unirritating shape have also passed without causing inconvenience. The pylorus not being irritated by a smooth body, can gradually dilate, and can allow it to pass without producing uneasiness; but where sharp spiculæ of bone have been swallowed unnoticed, alarming, perhaps fatal consequences, have ensued, without the cause being suspected. From the consideration of the pylorus, we must perceive the obstacles it will oppose to the passage of a

sharp body. It is endowed with contractile power, and is sensible to a stimulus. The contact of a sharp body must stimulate it violently, and must consequently cause it to contract, and thus oppose the passage of that which irritates it.

A gentleman at dinner swallowed a small fragment of bone. On the same evening, uneasy symptoms came on. He felt a pain in the centre of the scrobiculus cordis rather dull, but causing great anxiety. It sometimes changed its situation, but was mostly referred to the centre of the scrobiculus cordis. He sometimes had intervals of ease, at other times his sufferings became aggravated in a violent degree. He then could not point out the situation of the pain so exactly as before. It was felt more internally, as if some part inside was grasping some sharp body. In this state his body was bent, his hand was firmly pressed against the region of the stomach, his pulse became small and quick, a cold sweat broke out over the surface, and his anxiety arose to an alarming degree. From this state he generally found relief by change of posture, and the pain mostly resumed its former situation in the centre of the scrobiculus cordis. He had a constant desire of keeping the hand on the situation of the pain. I had recourse to diluted muriatic acid as strong as I could venture to give it. All bad symptoms ceased under its use, and he found no inconvenience from the acid, which freed him from the state of suffering in which he had been. I met with similar symptoms in the case of a gentleman who was conscious of having accidentally swallowed a fragment of bone at dinner, a good many days before. I had recourse to a similar practice, and with complete success.

Mrs. P—le, of Nicolson Street, in Edinburgh, consulted me last winter about a dull kind of pain in the region of the stomach. Not being decided as to the nature of it, I merely recommended attention to regimen. She applied to me a second time, and stated that she was not better, and complained of the great anxiety it caused her. I now suspected, that the pain might arise from a spiculum of bone accidentally swallowed. On close attention to the symptoms, I found they were the same as those stated above. She had the constant desire of keeping the hand on the situation of the pain, which was mostly felt in the centre of the scrobiculus cordis. There were intervals of ease, at other times the sensation of a sharp body being grasped, threw her into a state of agony. In this state, the pulse became small and quick, and a cold sweat broke out over the surface. Although she had not the least recollection of having taken any thing that would account for the symptoms, yet I did not hesitate in thinking, that the case was similar to those mentioned,

particularly as she had taken food in which a spiculum of bone might have been. I added as much acid to a half pint of water as I thought would be sufficient to relieve the symptoms without injuring the stomach. She took this quantity at one draught; but my disappointment was indeed great, when she complained of being rather worse on the following day. The acid had evidently increased the irritability of the stomach without acting on the foreign body. I now supposed that the acid had passed out of the stomach without remaining a sufficient time to act on the spiculum of bone; and as the irritability was increasing daily, I determined not to lose time, but to have recourse to the most vigorous practice at once. I made the diluted acid much stronger than what she had taken the day before; and having taken a quantity of it to be certain that it was not too strong to injure the stomach, I explained her case to her, and she willingly agreed to adopt any plan of treatment I should propose. She took a wine glass of this diluted acid every ten minutes. After a half pint of it was taken in this manner, she took the same quantity in one draught, and I was happy to find, after it, that the pain and anxiety had ceased with which she had been in agony during thirteen days. She now said she felt only a general sense of soreness; she slept well that night, next day she still felt the general sense of soreness, but she was in good spirits, and completely free from the pain. Having recourse to the remedy quickly on account of the urgency of the symptoms, unfortunately I did not ascertain the strength of the diluted acid I used. The standard I employed was to try it on myself in every case, and to take it as strong as I could with safety. The plan employed to prevent the teeth from being injured, was, to make the patient open the mouth as wide as possible, and to protrude the tongue so as to cover the teeth of the lower jaw; the edge of the glass was then rested on the tongue, and the diluted acid was swallowed without allowing it to come in contact with the teeth of the upper jaw. The mouth was repeatedly washed with water. In this manner, the teeth escaped uninjured even in the case of the patient who had been affected thirteen days, and who took a deal of the acid.

If this patient had been allowed to remain without medical assistance, it may be fairly presumed, that a fatal gastritis or ulceration of the stomach might have at length ensued. A thickened or ulcerated state of the pylorus might have been caused, and I am afraid, that affections of this kind have been classed under the title of scirrhus pylorus, while the cause of the mischief has not been suspected. It is possible that an ulceration would take place, through which the contents of the stomach would be ex-

travasated into the abdomen. A small fragment of bone might easily escape observation when enveloped in the ingesta of the stomach. It would be a desirable thing that the attention of examiners would be in future directed in search of such a cause in cases of extravasation of the contents of the stomach into the abdomen, and in cases of diseased pylorus. There is some danger of confounding the symptoms with those of cramp of the stomach, as a patient may have swallowed a spiculum of bone without being aware of it. The bent position of the patient, the contortions of his body, his hand pressed against the seat of the pain, the anxiety depicted on the countenance, and the intervals of ease, may deceive a practitioner suddenly called in, and may lead to injurious practice. These symptoms may be distinguished from those of cramp of the stomach, by the following marks : The pain is mostly felt in the centre of the scrobiculus cordis, and is described as if it could be covered with the point of the finger. In this situation, although the patient has a desire of pressing the hand gently against the seat of the pain, yet very firm pressure increases it. When the pain is felt more internally, causing the sensation of something being grasped, firm pressure gives relief, the pulse becomes quick and small, and a cold sweat breaks out over the surface. Perhaps it may be asked, would not it be better to employ an emetic in such a case ? A person took an emetic on account of having accidentally swallowed a sharp body, and soon after expired. As the surgeon who was called in to examine the body, and by whom I heard the case related, will probably give the particulars in some periodical work, I shall not anticipate him ; but the account of the dissection was quite sufficient to prevent me from employing an emetic. As a sharp body is prevented from passing, on account of its irritating the pylorus, a purgative medicine was, I think, contraindicated ; it would be likely to make the pylorus suffer more. The diluted acid must have afforded relief by acting on the sharp irritating points which were fortunately most exposed to its influence, and thus allowing that to pass which was before prevented by the irritating points causing the pylorus to contract violently, when they came in contact with it.

INTELLIGENCE.

WE see in some of the latest English Medical Journals a suggestion by "John Thompson, M. D., Surgeon to the Forces, &c." that "Chicken-pox and modified and natural small-pox originate in one and the same contagion." This same suggestion we saw a year or two since from the same source, but thought it would have been refuted before this time. We now notice it, because circumstances have enabled us to decide the matter more positively perhaps, than can be done so readily in Europe. In New-England we do not permit small-pox to spread, nor have we for a very long time. It is now and then introduced, but it is always prevented at once by the measures of seclusion always adopted. Meanwhile the chicken-pox appears very frequently, and often spreads widely. Yet this never produces small-pox, which it should do, if Dr. Thompson's hypothesis were true, as we understand him. *Ed.*

WE published in volume 8th, page 80, the case of M. Michelleau, in which M. Richerand removed a portion of the sixth and seventh ribs, and a corresponding portion of the pleura. On the 27th day after the operation M. Michelleau left Paris for his own home, where he arrived without injury.

In a note to the report of the operation contained in the 6th volume of the Journal of Sciences and Arts, edited at the royal institution of Great Britain, we find the following. "We have learned within these few days, that the cancer which this operation was intended to extirpate, was reproduced shortly after, and that M. Michelleau died, in consequence, on the 20th of July, without having obtained any benefit from the operation he endured." The operation was performed on the 31st of March. *Ed.*

Non-Mercurial Practice in Syphilis.

[Communicated.]

MR. Thomas Rose of Oxford, was the first of the surgeons of the present day, who adopted and encouraged the non-mercurial practice in syphilis. He commenced his experiments in 1815 and

the idea that mercury is a specific for that disease, is now pretty generally relinquished by the best surgeons in Great Britain and this country. Dr. Guthrie, whose paper on this subject in the 8th. Vol. of the *Medico-Chirurgical Transactions*, is impartial and judicious, says he has cured one hundred cases of chancre without mercury, and has notes of four hundred others where the same treatment has been equally successful. Dr. John Thompson relates one hundred and fifty-five cases of syphilis which were cured by him in the Consolidated *dépôt* Hospital of Edinburgh castle, and all without mercury; and he believes that this disease in all its forms, may be speedily and effectually cured by an "antiphlogistic regimen—rest in a horizontal position—and mild local applications." Dr. Pearson, of London, whose rank as a surgeon, and whose office at the Lock-Hospital, give uncommon weight to his opinion in this case, lately remarked to a friend, that he does not use two ounces of mercury now where he formerly used two thousand. A young physician of this town has in his possession notes of 4767 cases, taken from the report of the army surgeons of Great Britain, on the result of the mercurial and non-mercurial practice in syphilis, in the several regiments of the army.

Of the 1940 which were cured without mercury, 96 had secondary symptoms; but every man was fit for immediate military duty, on dismissal from the hospital. The average period for the cure of primary symptoms, was 21 days—of secondary, 36 days.

Of the 2827 remaining cases where mercury was used, 51 only had secondary complaints, but 2 men were rendered unfit to continue in the service. The average period for the cure of primary symptoms, was 33 days—of secondary, 45.

Thus it appears that syphilitic complaints may be cured without mercury,—that the non-mercurial practice is expeditious and safe; for though secondary symptoms occur more frequently, they are proportionally more mild and less obstinate.

MASSACHUSETTS MEDICAL SOCIETY.

At the annual meeting of the Fellows of the Massachusetts Medical Society, held on the 9th day of June 1820, The following gentlemen were elected Counsellors of the Society for the year ensuing, viz. For the District of

SUFFOLK.

Drs. David Townsend, Thomas Welsh, Aaron Dexter, William Spooner, James Mann, Asa Bullard, John G. Coffin.

John Dixwell, James Jackson, John C. Warren, John Gorham, John Randall, Thomas J. Parker, George C. Shuttuck.

ESSEX.

Drs. Edward A. Holyoke, Joshua Fisher, Benjamin L. Oliver, John D. Treadwell, Oliver Prescott, James Gardner, Nehemiah Cleveland, Nathaniel Bradstreet, Richard Hazeltine.

MIDDLESEX.

Drs. Isaac Hurd, Joseph Fiske, Amos Bancroft, Calvin Thomas, William Gamage, Abiel Haywood, Rufus Wyman, James P. Chaplin, Thomas Bucklin.

WORCESTER.

Drs. Oliver Fiske, Abraham Haskell, Austin Flint, Jonathan Osgood, Stephen Batcheller, Jr., Samuel Manning, John Green.

HAMPSHIRE.

Drs. Elihu Dwight, Enos Smith, William Hooker, Joshua H. Flint, Seth Lathrop, Alpheus F. Stone.

BERKSHIRE.

Drs. Timothy Child, Hugo Burghardt, Asa Burbank.

NORFOLK.

Drs. Amos Holbrook, John Bartlett, Abijah Richardson, Nathaniel Miller, Robert Thaxter.

PLYMOUTH.

Drs. James Thacher, Hector Orr, Cushing Otis.

BRISTOL.

Drs. Samuel Perry, Benjamin Billings.

At a stated meeting of the Counsellors, held on the 8th day of June 1820, The following gentlemen were elected Officers of the Society for the year ensuing, viz.

JOSHUA FISHER, M. D. *President.*

THOMAS WELSH, M. D. *Vice President.*

JOHN C. WARREN, M. D. *Corresponding Secretary.*

JOHN DIXWELL, M. D. *Recording Secretary.*

JOHN GORHAM, M. D. *Treasurer.*

JOHN RANDALL, M. D. *Librarian.*

AARON DEXTER, M. D.

JAMES JACKSON, M. D.

JOHN DIXWELL, M. D.

JOHN G. COFFIN, M. D.

JAMES P. CHAPLIN, M. D.

} *Censors for the Society at large and for the First Medical District of the Commonwealth.*

Censors for the Second Medical District.

Drs. Oliver Fiske, Abraham Haskell, Jonathan Osgood, Austin Flint, John Green.

Censors for the Third Medical District.

Drs. Elihu Dwight, Joseph H. Flint, Alpheus F. Stone, John Stone, William Hooker.

Censors for the Fourth Medical District.

Drs. Hugo Burghardt, Timothy Child, Asa Burbank, Daniel Collins, Benjamin Rogers.

The annual discourse was delivered by DR. WARREN, before the Society, which was honoured by the presence of his EXCELLENCY THE GOVERNOR, DR. EUSTIS, and other distinguished persons. The subject of the discourse was, "A COMPARATIVE VIEW OF THE SENSORIAL AND NERVOUS SYSTEM IN MAN AND ANIMALS. The orator commenced by explaining the arrangement of animals, which it was his intention to adopt. He then proceeded to compare the great sensorial organ, the brain, in man, with that of animals of other orders of the class Mammalia.—Then, with that of Birds, of Reptiles, and of Fishes. Afterwards, instead of at once pursuing this comparison through the *invertebral* classes, he described the *nervous system* in the four *vertebral* classes, and demonstrated the great similarity in the structure and arrangement of the Nerves in these classes. He next took up the Sensorial and Nervous systems in the *invertebral* classes, and in one view gave a sketch of these systems in the Mollusca, Crustacea, Insecta, Vermes and Zoophyta. Thus having completed a comparison of the structure, he went on to consider the inferences, which might be drawn from such a comparison, as to functions, and particularly human functions.

1st. It appeared, that the structure of different animals, considered in a general and comparative view, made it probable, THAT THE FUNCTIONS OF THE BRAIN, AND THOSE OF THE NERVOUS SYSTEM, ARE NOT NECESSARILY CONNECTED, AND ESSENTIALLY DEPENDENT ON EACH OTHER.

2d. THAT THE MUSCULAR POWER DOES NOT EMANATE FROM THE BRAIN, many animals, with great muscular vigour, having a small brain, and others not destitute of muscular power, being wholly without a brain.

3d. THAT THE MUSCULAR POWER DOES NOT FLOW FROM THE NERVES, many animals possessing this power, which exhibit no appearance of nerves.

The references to be made from comparative views of the Brain, he considered less certain, because the functions of this organ are involved in deep obscurity. But he endeavoured to make it appear that Comparative Anatomy affords no

grounds for some doctrines, which have recently been said to be supported by it. He proved that the difference in the structure of the brain in man, and various animals, is not sufficient to account for the difference in their INTELLECTUAL FUNCTIONS. In order to do this, he demonstrated, by referring to facts previously stated, First, That all the parts of the human brain are found in animals. Second, That THE COMPARATIVE MAGNITUDE OF THE BRAIN is as great in a number of animals as in man. Third, That the COMPARATIVE MAGNITUDE OF PARTICULAR PARTS OF THE BRAIN is in no instance universally in favour of man : or, in other words that there is no one part of the human brain uniformly super-eminent, so as to be fixed on for the seat of the intellectual principle. Here, occasion was taken to animadvert on the doctrines of GALL and others, who assign particular parts of the brain for the seat of particular faculties and passions. Various other points of comparison were presented, to show, that there is in no respect an inviolable superiority in the organization of the human brain.

After this, he exposed the bad philosophy, which had been employed, in making the brain to be similar to an organ of secretion : and having illustrated these opinions by some collateral facts and arguments, concluded, that COMPARATIVE ANATOMY affords no support to the doctrine of MATERIALISM. That, on the contrary, as the superiority of the intellectual functions in man, is not explainable by organization ; the anatomy of animals favours the opinion, that these functions emanate from a principle peculiar to man, which, though *connected with organization*, is not *dependent on it*, but is essentially distinct. Finally, that the nature of this principle must therefore be immaterial, and, that it is beyond the limits of our power of investigation.

*Linnæan Society of New-England.**

THE friends of this institution are informed, that its members will receive and preserve specimens in the various departments of natural history, and for the convenience of those who have or may have specimens to present, Messrs. Bartlett and Chase, Druggists, No. 13, Cornhill, have obligingly offered to receive them at their store. A note left with them, stating where any specimens intended for the Museum are deposited, will be duly attended to.

Linnæan Society's Room, Boylston Hall.
June 8th, 1820.

* This society was incorporated at the late session of the legislature.

The design of the society, whose advertisement is published above, is the *collection, arrangement, and preservation*, of the various objects of natural history. The society was founded a few years since, and the efforts of its immediate members, aided by a few friends, have been the means of accumulating many interesting specimens from the animal, vegetable, and mineral kingdoms. The expences necessary for its increase and preservation, have hitherto been entirely defrayed by the few members who constitute the society. They have however within a few weeks, succeeded in associating with them a number of the friends of science among us in the cause of its support.

Is it not desirable that something beyond a pecuniary interest, should be felt by the community in an institution of this kind? In its museum, materials are collected of interesting study, and useful knowlege. It may become hereafter a place of public instruction, by furnishing ample and highly valuable means of illustrating public or private lectures. The young student will in this way come to feel an interest in pursuits which have engaged some of the best minds in the old world in their cause, and thus a department of useful science find a cultivation here, which has hitherto engaged comparatively but a small attention.

The most important interests of this institution are its pecuniary support, and the increase of its collection. The first of these requires nothing more than a general conviction, that the study of natural history is an useful intellectual exercise, and of practical utility. The only argument in support of the first position, which need be advanced here, is an appeal to those distinguished individuals who have in all ages devoted themselves to the pursuit, and the public and private patronage, which has been afforded it from the earliest to the latest periods of history.

To collect objects for preservation and study, the second interest referred to, is a greater and more difficult task than to procure pecuniary patronage. To do this, we must engage and secure the interest of the traveller in foreign climes, and the voyager through remote and nearer seas. The traveller from among ourselves, and into the remote parts of our own country, whether his purpose be pleasure or science, must be enlisted in the cause. His local attachments must be excited, and directed towards the promotion of an important institution, whose usefulness may be advanced by his efforts, and which promises to preserve what with more or less difficulty he may have procured.

There is another method of adding valuable specimens to a collection of this kind, and this may be adopted with little trouble or expense. It consists merely in collecting the birds, fish, &c.,

the common, and especially the rare, which are now and then brought to a town for sale. Many valuable articles have already been obtained in this manner, and by offering a trifling pecuniary inducement, individuals might be enabled to procure others which are not used for food, but which are very interesting to the naturalist.

The effect of adopting this method for promoting the interests of the society, will be, that individuals will come to feel identified in some measure with it, and interested in its success.

Our sportsmen have it in their power to do a vast deal for this institution. They may add to its museum, every species of game to be found in our neighbourhood, and thus give a scientific interest to a pleasurable pursuit. That their efforts may not be in vain, the public are informed that an artist is now employed by the society, whose principal business it is to preserve all specimens which may be added to its collection.

The objects of this society are thus purely scientific, and the public, by promoting its various interests, may confer a lasting benefit upon the community.

OBITUARY NOTICES.

Died at Charlestown, Hon JOSIAH BARTLETT, M.D. for many years a distinguished practitioner of medicine in the vicinity of Boston.

Dr. Bartlett was born at Charlestown, in the year 1759, and having received his medical education from Dr. Isaac Foster, a very respectable physician of the time, he entered the American army as surgeons' mate on its first formation at Cambridge, on the 20th of April, 1775, the day following the battle of Lexington, and rising through various grades he continued in the public service until the year 1780, when he resigned his commission and went two voyages as surgeon of ships of war. About the close of the war he settled in his native town, and became a member of the honourable fraternity of masons, among whom he was very distinguished, and occupied all the posts of honour to that of grand-master, and especially was conspicuous for the number of occasional and appropriate addresses which he delivered in that society. Dr. Bartlett having had an opportunity of attending only a single course of lectures belonging to medical education, in the early part of his life, namely a course of lectures on Anatomy, delivered in Boston in 1780, by Dr. Warren, resolved, long after his establishment in business, to avail himself of advantages which the improved state of the country afforded,

and notwithstanding his extensive practice, attended a complete course of medical lectures at Cambridge in 1790: and in 1791 became Bachelor of Medicine, and in 1801 Doctor of Medicine. In 1789 he was admitted to be a member of the Massachusetts Medical Society, soon after became Recording Secretary of that highly respectable body, and continued in office in various situations until his death; and perhaps no man contributed more time and active exertion to improve the state of the society, and through it the interests of medical literature. He delivered two public discourses of a medical nature, one before the Middlesex Medical Association, the other before the Massachusetts Medical Society; the latter of which is well known as affording a very interesting historical sketch of medical characters in this part of the country, from its settlement. He also published various papers on medical subjects, in the communications of the Medical Society, and in the *New-England Medical Journal*. Although engaged in a most extensive practice, he found time to employ a part of his activity in civil offices, and was at various times elected representative, senator, and counsellor, in the state government.

Dr. Bartlett's character was remarkable for industry, activity and intelligence. He never declined any duty which was assigned him, and always executed it speedily and thoroughly: and was of course constantly resorted to for difficult services. Perhaps no individual in this vicinity delivered so great a number of public orations, medical, political, and literary. He possessed a physical constitution which promised a long as well as active life; but his spirits being broken by unfortunate occurrences, his health in consequence became impaired two years before his death, his activity was paralysed, his desire of life was extinguished, and at length on the third day of March 1820, he was struck with an apoplexy, which in two days after terminated his existence.

Died at Cummington, Massachusetts, the Hon. PETER BRYANT, M.D. æt. 50. This gentleman was highly esteemed in the part of the country where he lived, for his skill in the surgical art. He became known to the physicians in the metropolis from his frequent appearance in the public legislative body; where he was always active in supporting whatever tended to promote improvement in the sciences, and especially that of medicine. Dr. Bryant was as remarkable for a modest and reserved demeanour, as for his acuteness, love of study and profound knowledge of his profession. He was twice appointed to deliver the

annual dissertation before the Massachusetts Medical Society, and when he was preparing to visit Boston to perform this duty in 1819, he was attacked with the disease to which he at last fell a lingering victim.

New Publication in the Press.

SAILORS' PHYSICIAN.

Exhibiting the Symptoms, Causes and Treatment of the Diseases and Hurts incident to Sailors and Passengers in Merchant Vessels, with directions for preserving their health in warm and sickly climates, being intended to afford medical advice to such persons while at sea, where a physician cannot be consulted. By USHER PARSONS, M.D. Fellow of the Massachusetts Medical Society, Surgeon United States Navy.

Foreign Medical Publications announced and published.

Practical Observations on the Means of preserving the Health of Soldiers, in Camp, and in Quarters; with Notes on the Medical Treatment of the most important Diseases which were found to prevail in the Army during the late War. By Edward Thornhill Luscombe, M.D. 8vo.

Pharmacologia; or, the History of Medical Substances, with a view to establish the Art of prescribing and of composing Extemporaneous Formulæ upon fixed and scientific Principles. By John Ayrton Paris, M.D., F.L.S. Third edition, enlarged. 8vo.

A Treatise on the Diseases of the Urethra, Prostate Gland, Vesica Urinaria, and Rectum; being a New Edition and Collection of the Papers on these Subjects. By Charles Bell, Surgeon to the Middlesex Hospital, and Lecturer on Anatomy, reduced into Systematic Order; with Notes, containing the Criticisms of the Editors of Foreign Editions, and the Opinions of Foreign Authors on these Diseases. By John Shaw, Demonstrator of Anatomy in the School of Great Windmill Street, Haymarket.

Cases of a Serious Morbid Affection, principally incident to Females after Delivery, Abortion, &c., and arising from Uterine Hæmorrhagy, undue Venæsection, Menorrhagia, protracted Lactation, Diarrhœa, Aphæ, Constipation, Scybæ, or other Causes of Exhaustion and Irritation. By Marshall Hall, M.D., F.R.S.E., &c.

On the Mimosæ; or, a Descriptive, Diagnostic, and Practical Essay, on Disorders of the General Health, in their simple and Complicated Forms, contrasted with some Acute and Insidious Diseases; being an Attempt to prosecute the Views of Dr. Hamilton and Mr. Abernethy. By Marshall Hall, M.D. F.R.S.E., &c.

A History of the Variolous Epidemic which occurred in Norwich in 1819, and destroyed five hundred and thirty Individuals; with an Estimate of the Protection afforded by Vaccination, and a Review of past and present Opinions upon Chicken-pox and Modified Small-pox. By John Cross.

Member of the Royal College of Surgeons in London, Corresponding Member of the Societ  Medicaled'Emulation of Paris, and late Demonstrator of Anatomy in the University of Dublin, &c.

A Short Account of some of the Principal Hospitals of France, Italy, Switzerland, and the Netherlands: with Remarks upon the Climate and Diseases of those Countries. By H. W. Carter, M.D., F.R.S.E., one of Dr Radcliffe's Travelling Fellows from the University of Oxford. 8vo. Price 8s. boards.

An Experimental Inquiry into the Laws of the Vital Functions; with some Observations on the Nature and Treatment of Internal Diseases. By A. P. Wilson Philip, M.D. F.R.S.E. In part republished by permission of the President of the Royal Society, from the Philosophical Transactions of 1815 and 1817; with the Report of the National Institute of France on the Experiments of M. Le Gallois; and Observations on that Report. 8vo. Price 10s. 6d.

TO CORRESPONDENTS.

Communications are on file from Dr. Williams of Deerfield. An anonymous communication on "Anthrax" from Oxford, Mass. is received.

END OF NO. III.—VOL. IX.

The New-England Journal

OF

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Vol. IX.

OCTOBER, 1820.

No. IV.

[*The following letter, addressed to one of the Editors of this Journal, is entitled, from the character of its Author, to the highest respect. Ed.*]

[Communicated for the New England Journal of Medicine and Surgery.]

DEAR SIR,

AS you some time since requested me to communicate to you an account of the experiments that I had made with the Prussic Acid, I propose now to avail myself of your invitation. I shall not only mention the results of some of my trials, but also state the circumstances which induced me to administer thus early this most powerful agent ; for I had employed it before we had received from Europe any report of its administration in pulmonary or febrile diseases ; and before any mention had been made in the United States of its use as a medicine, or even a conjecture had been formed of its medicinal properties. The Acid then was not to be found in the shops, and scarcely a person in this section of the country had ever seen it. It had been announced, to the public, that Mr. Schrauder, Apothecary of Berlin, had made the interesting discovery, that the Prussic Acid is contained in laurel-water, and the distilled water of the flowers of peach trees, as likewise in an infusion of bitter almonds. And that it had in common with those substances the property of killing animals. (Med. and Phil. Jour. vol. X. p. 95.) It was a medical canon of Linnæus, that poisons differ from medicines, not in their virtues, but their doses. And I have seen a quotation from Plutarch, saying, that physicians would never be completely suc-

cessful until they administered poisons as medicines. If we take but a glance at the *Materia Medica*, we shall be convinced that all the most active medicines are poisons, or in other words, that poisons and medicines are convertible terms; and that agreeably to this opinion, they were by the Greeks both denominated by the same word *φαρμακον*.

The circumstances which induced me to turn my attention to this subject were, my want of success in the common treatment of phthisis, and my having a very near relation then in the incipient stage of that disease. I had read in Murray's *Apparatus Medicaminum*, when treating of the *Prunus Laurocerasus*, some hints relating to the employment of the leaves of this plant in the treatment of the above malady. About the year 1810, a small quantity of laurel-water came into my possession. I prescribed it in the case of my relative with good effect, and in the case of one other patient sick of the same disease. But the laurel-water was soon exhausted. I then applied to Professor Barton of Philadelphia, to ask his aid in procuring for me, some of the leaves of the *Prunus Lauro-cerasus*. He very kindly sent me a small quantity, which was all that at that time could be procured. A tincture of the leaves afforded the same result as the exhibition of the laurel-water; but the quantity was exhausted before the disease was cured. This put me upon reflecting, that if I could procure the prussic acid, I then should be able to prescribe the efficient principle of the lauro-cerasus; and could command any quantity of it. I therefore, applied to Mr. John Hunt, chemist, and prevailed on him to prepare for me a small quantity of the acid.* By referring to my common place book, I find, that it was in the autumn of 1811, that I obtained the first quantity of the acid. This was prepared according to the process of Dr. Schaub, (vide *Med. Repos. Hexhade. 2. vol. 1. p. 314.*) and afforded the characteristic smell, and when tasted gave evidence of the presence of the prussic principle. Some of the first experiments

* This may certify, that the subscriber was in the employ of Messrs. Seccomb and Williams, at the time the Laboratory owned by them was conducted by Mr. John Hunt, jr. that sometime in the autumn of the year 1811, said Hunt prepared for Dr. Benjamin L. Oliver, and by his express desire, a quantity of Prussic Acid, and before that time the article was not sold in any Apothecary shop in Salem; neither had I ever heard of any acid of this kind having been seen here antecedent to this preparation; but since the above date the Prussic Acid has been exposed for sale in our shops.

JONATHAN WEBB.

Salem, July 25, 1820.

See a note "In observations on Hydrophobia," by Dr. Thacher. p. 230. This was published 1812. My communication was before this date.

which I made with this powerful agent gave rather flattering results, though it often afterwards failed in giving the relief anticipated.

Such, however, was the success of my experiments with the acid, that I was induced to recommend the trial of it to several of my medical brethren. Some of them administered it, and with such effect, as to occasion a demand for the medicine ; and its preparation was continued by Mr. Hunt, and it was retailed by the apothecaries. I lost no time in administering the medicine to my relation, and she obtained very soon from it an abatement of the cough, and shortly after it, a suspension of the disease, and recovery of health. This patient, experienced again this spring, a renewed attack of the disease ; (as she has often felt since the first invasion of the malady,) and has again been relieved by a very free exhibition of the acid. This medicine has in several other cases proved palliative, while in some cases it seemed to have been productive of little or no effect. This result I am now disposed to impute to the degeneration of the acid, from its exposure to the influences of light and sometimes of the air ; and to its having been exhibited in a dose not accommodated to such deterioration. Perhaps, also, the acid may have suffered decomposition sometimes, from the vehicle in which it may have been exhibited, and thus been rendered inert. This is mentioned by some writers as often happening. Adverting to this circumstance, will explain the apparent capriciousness of the results of the experiments with this article. Two patients, which I had some years since, I believe to have been cured by it. I have not generally found the medicine to have been useful unless when exhibited in a dose that is followed by head ach. When this happens, it commonly is succeeded by an abatement of the cough, more comfortable nights, increase of the appetite for food, and a diminution of or complete suspension of the febrile habit. I have seen two cases of mania, accompanied by suppression of catamenia, which were relieved by this medicine. They occurred about four years since. The disease, I believed, recurred in one, or both patients.

I have known a case of asthma, to have been much relieved by the acid, but when discontinued the malady has returned ;—But, again, on a return to a use of the acid, the disease has been suspended. I am not certain that I have witnessed any permanent bad effects, from the cautious administration of the acid. I have known, however, when the dose of it has been augmented too suddenly, a very peculiar sensation to be produced at the stomach, attended with a very quick weak pulse and faintness, accompanied with retching, which obliged the patient to lie on the

bed ; but these symptoms soon went off and left the person remarkably well afterwards. I generally begin, when using the acid of the strength I first had it, with about six drops, to be given in a little water, and the dose to be repeated every six hours, augmenting the number of drops each time, until head ach is produced. The energy of the Hydrocyanic Acid when duly prepared, is such, as to afford a hope that, it may not only prove a most valuable auxiliary in the cure of many other chronic diseases, but also afford the means of curing those herculean maladies Hydrophobia and Tetanus. Professor Silliman has suggested its use in the latter disease.*

I have found it to be a very important part of the treatment of phthisis pulmonalis, to bleed in the incipient stages of the disease. But, no process is beneficial unless aided by warm clothing particularly of the chest, and for this purpose, an eider down waistcoat is very convenient. If to this be added, the administration of the prussic acid given in as large doses as is compatible with the comfort of the sick, much hope may be entertained of the result. We are, however, always to bear in our minds, that the medical art is a conjectural and uncertain one ; and that the action of every medicine is modified by that of the system, and that according to this state or condition of the system, a medicine is active or inert. Hence the propriety of trying different active medicines, in the hope that some one of them may meet that condition of the system which may render it efficient.

I am Sir, with much respect, and esteem,
Your friend and obedient servant,

B. LYNDE OLIVER.

Salem, July, 1820.

Chemical Analysis of Indian Corn. By JOHN GORHAM, M.D.
Professor of Chemistry, in Harvard University.

[Communicated for the New England Journal of Medicine and Surgery.]

INDIAN CORN, either alone, or mixed with the flour of wheat or of rye, constitutes a considerable article in the food of the

* Professor Silliman, in his excellent Journal, has a very interesting paper on the subject of the Prussic Acid, in which, not having heard of the experiments that had been made here ; remarks, " As far as I am informed, these researches have not been so extensively prosecuted in the United States as could be desired,—partly from the difficulty of obtaining the acid, which is no where sold in the shops, and which can be prepared only by a practical chemist ; and partly, in all probability, from negligence and incredulity." Silliman's Journal, vol. II. p. 62.

inhabitants of the United States. By many it has been preferred to wheat, and it has been said to yield in equal weight a greater quantity of nutritive matter than either of the other farinaceous grains. It is a subject of some interest to determine this point. I do not recollect to have seen any analysis of this grain by the European chemists ; and the following experiments were made as an attempt to supply the deficiency.

Several varieties of maize are cultivated ; but for the present my attention will be confined to the small yellow grain, and the large, flat and white kind, which is commonly known by the name of Virginian corn. The results obtained in examining these two varieties were so similar, with the exception of the colouring matter of the first, that I shall confine myself to the detail of experiments on the yellow species.

The corn employed grew in the neighbourhood of Boston. It was reduced to powder, but not sifted.

Expt. 1. One hundred grains of this powder, after exposure to a moderate heat, until perfectly dried, weighed 91 grains.

Expt. 2. The dry mass was then macerated in water for 48 hours ; it was afterwards triturated in a mortar, with a portion of the liquid in which it had been immersed ; the opaque and milky fluid obtained was poured off, new portions of water were added and triturated as before, and these processes were repeated until no more of the solid remained in the mortar. The emulsive liquid after having been passed through a filtre, was very nearly as transparent as water.

It was not affected by alcohol, acids, nor alkalies. With solution of neutral acetate of lead, it gave a white precipitate. A crystal of iodine put into a portion of it and allowed to remain for 24 hours became surrounded with a light blue cloud, but from the shade of colour, the farina present appeared to be in very minute proportion.

Expt. 3. The liquid was evaporated to dryness in a basin of Wedgewood's ware, and during the process its vapour gave out a very perceptible odour of bread, made of or containing Indian corn. The residue was a grayish semi-transparent substance disposed in laminæ. It weighed 4 grains.

Expt. 4. This matter after having been softened by water was digested in warm alcohol for some hours, the whole was filtered, and there remained on the filtre a solid substance, which when dried weighed 1.75 grains. It was opaque, of a gray colour, ductile, tenacious and adherent to the fingers. It dissolved in water, and was precipitated from it by alcohol. Exposed to heat, it burned like gum, at the same time exhaling the odour of burning bread. Rubbed with quicklime, it did not exhale the odour of

ammonia, nor produce white fumes when a paper moistened with muriatic acid was brought near it. I considered it as analogous to gum.

Expt. 5. The clear alcoholic solution, which exhibited a bright yellowish red colour, and had a taste at first sweetish followed by a perceptible bitterness, was evaporated in a glass capsule. When highly concentrated it had the appearance and consistency of honey, and on cooling, concreted into a solid of a dark amber colour, the taste of which was both sweet and bitter. It weighed 2.25 grains. It was deliquescent, and on standing for a few hours became liquid. It was redissolved in alcohol, forming with it a dark red solution. Water added to this liquid produced no other apparent change than that of diluting its colour.

Expt. 6. To this diluted solution, Goulard's Extract of Lead, (*neutral acetate*,) being cautiously added, a brown coloured substance was separated, the whole was thrown on a filtre, and the fluid which passed through was transparent and colourless, while there remained on the paper, a matter, which was collected, diffused in water, and exposed to a stream of sulphuretted hydrogen. After standing for a little while, the liquid was poured off from the sediment and evaporated to dryness in a glass capsule. The mass weighed about 0.80 of a grain. Its colour was reddish brown, its taste bitter and it was soluble in water. It exhibited the properties of extractive matter.

The saccharine substance which amounted in weight to 1.45 grains, remained dissolved in the liquid.

Expt. 7. In consequence of the rapidity with which the entire mass in the preceding experiment deliquesced, I was led to suspect the presence of some deliquescent salt. I had ascertained, that when the powder of indian corn was rubbed with quicklime, it gave out the odour of ammonia and produced white fumes with muriatic acid. But, in my experiments upon this substance, I was not able to detect any ammonia in either of the solid products of its analysis. Hence it appeared probable, that it might exist in it in a saline form, and be removed by the liquid in which the corn was immersed or boiled.

Accordingly, about 4 grains of gummy and saccharine matter were obtained by the process stated above, it was acted upon by alcohol, which was then evaporated. The mass was deliquescent. To one portion of this, a drop of sulphuric acid was added, an acid odour was immediately developed, and it had the characteristic smell of acetic acid. The other portion was mixed with quicklime, and produced, with a paper moistened with liquid muriatic acid, a white vapour, though very small in quantity. These experiments would seem to show the existence of acetate

of ammonia, but it was in minute quantity, and it is impossible to say whether it originally constituted in that form a part of the corn, or was a product of analysis.

When the gummy portion was boiled in water, it left a white substance in minute quantity, which I found to be soluble in muriatic acid, and precipitable from it in white flocks by pure ammonia. This substance, when heated before the blow-pipe, turned black, then became white, and finally melted into a perfectly white and transparent bead. It probably consisted of, or at least, contained, phosphate of lime.

Expt. 8. The mass which remained when the emulsive liquid in expt. 2. was filtered, exhibited when dried, two distinct strata, the one was of a beautiful white, and formed into angular masses, the other of a fibrous appearance, with a mixture of gray and yellow. The whole mass was digested for 24 hours in warm alcohol; at the end of that time the liquid had assumed a fine straw yellow colour; it was filtered and evaporated in a glass capsule. When highly concentrated, or so soon as the odour of alcohol ceased and it was allowed to cool, a substance possessing the following properties, was deposited.

It was soft, ductile, tenacious and highly elastic, but destitute of taste and nearly so of odour. Its colour was yellow, and it resembled beeswax which had been melted in a capsule and allowed to cool in it. Its specific gravity was greater than that of water. When exposed on a spatula to the heat of a lamp, it increased in bulk, became brown, exhaled the odour of burning bread, then melted, giving out the smell of burning animal matter, and was decomposed without inflaming, leaving a black and voluminous coal. Put into the flame of a lamp, it took fire, but did not burn with much rapidity. When distilled in a glass tube, it produced inflammable gases, an empyreumatic oil, similar in appearance to thin tar and of a sharp somewhat acid taste, and left a quantity of charcoal. During this distillation, there was no perceptible odour of ammonia, nor were white fumes produced by muriatic acid.

It was insoluble in water at any temperature, but it readily dissolved and in large proportion in alcohol, producing a transparent and light yellow solution, which was immediately rendered white and turbid by the addition of water. The insoluble matter separated very slowly from the mixed liquid, requiring in fact, several days for its completion. It was likewise soluble in oil of turpentine, and sulphuric ether, and sparingly so in the mineral acids. From its solution in nitric acid it was precipitated both by water and solution of potash, but when the latter was added in excess, the precipitate was redissolved, producing a yel-

lowish solution. The caustic alkalies dissolved this matter, but it was insoluble in solutions of their carbonates. When rubbed in a mortar with liquid ammonia, it produced a sort of soapy compound, decomposable by acids. While dissolving in solution of potash, it did not give out the odour of ammonia, nor when rubbed with quicklime. Heated with sulphuric acid it was decomposed, and an uniform black liquid produced. It was insoluble in the fixed oils, even when aided by heat, but at the boiling temperature of olive oil it melted, and began to decompose, gradually changing its colour to brown and black.

When put into melted resins it apparently incorporated with them, and formed a homogeneous mass.

The amount of this matter procured in the way I have mentioned, was 3 grains.

This substance may be obtained with great ease, and in sufficient quantity for experiment, by putting a few ounces of meal formed from the yellow corn, into a flask, pouring into it alcohol, heating the mixture gently, allowing it to remain at rest for some hours, then filtering, and evaporating.

From the results of its examination it appears, that this matter differs from all the known proximate principles of vegetables. In its physical properties, independently of its colour, it resembles vegetable gluten, and like that substance it is soluble in caustic alkalies, but it differs from it apparently in containing no azote, in its great solubility in alcohol, and in its permanency. It is not apparently liable to spontaneous decomposition, at least a small portion which has been exposed to the air for six weeks, has not undergone any obvious change. On the other hand, it seems to exhibit a considerable analogy to the resins. Like them it is soluble in alcohol, essential oils, alkalies, and partially in acids, but is perfectly insoluble in water. It is inflammable, and probably composed of oxygen, hydrogen, and carbon.

This substance I shall call *zeïne*, not from any wish to multiply vegetable principles; nor because I think it of any importance, but merely that it may be definitely described and designated without circumlocution.

It should have been remarked before, that the powder of yellow corn, after having been digested in alcohol, loses its colour and becomes white.

Expt. 9. The mass which had been exposed to the action of alcohol was washed with water, it was then macerated in water for several hours, and afterwards boiled in successive portions of that liquid. The last portion being decanted, the whole was thrown on a piece of linen, the residue washed with warm water, and then dried.

The liquid was opal coloured, and on cooling deposited a thick white and flocculent substance. This solution when triturated with iodine produced a pure blue colour, and exhibited with other reagents the properties of a solution of farina or starch.

The residue when dried weighed 14.25 grains. It was not homogeneous, but evidently consisted of two distinct substances, one of them having a gray colour and being tough, somewhat elastic, and adhesive, the other exhibiting a fibrous texture and consisting apparently of cuticle.

Expt. 10. The 14.25 grains of residual matter were boiled for some time in water acidulated with sulphuric acid, it was passed through a filtre, and the substance which remained, when collected and dried, was found to weigh 3.75 grains.

The acid solution being boiled for some time and then concentrated, deposited on cooling a grayish substance, which on being dried weighed 2.25 grains. It was adhesive and somewhat elastic. Exposed to heat it enlarged in bulk, became brown, appeared to undergo imperfect fusion, and exhaled the odour of burning bread. Hence I considered it as identical with albumen.

The remaining liquid when boiled for a long time, gave evidences of the presence of saccharine matter, and it appeared therefore, that about 8 grains more of farina had been dissolved.

Expt. 11. The three and a half grains of solid matter were put into a solution of caustic potash, heated nearly to the boiling point of the liquid and then kept for 24 hours. On examining the fluid it was found to be turbid; it was passed through a filtre, the residue washed with water, which was added to the alkaline solution, and dried. It weighed rather more than 3 grains, and appeared to consist of cuticle and ligneous matter.

When this matter was exposed to heat, it burned into a coal; it was digested in muriatic acid, which was afterwards filtered and saturated with ammonia, a light flocculent precipitate took place, which I concluded to be phosphate of lime.

The alkaline solution when saturated with nitric acid, let fall a precipitate of a yellowish gray colour, which, when collected on a filtre and dried, was so small in quantity and adhered with so much pertinacity to the paper, that it could not be separated for examination. Its weight might have been from $\frac{1}{15}$ to $\frac{1}{20}$ of a grain. When the paper was burned, this matter, as the flame reached it, became black, appeared to melt and exhaled an odour similar to that produced by albumen.

Indian corn when submitted to destructive distillation gives out a considerable proportion of water, an empyreumatic liquid,

with slight traces of ammonia, and abundance of inflammable gases, of which carbon is the basis. I succeeded but imperfectly in incinerating its coal. It was partly soluble with slight effervescence in muriatic acid, from which a white precipitate was thrown down by pure ammonia; when this was removed, oxalate of ammonia occasioned a further turbidness and precipitation. There were traces of the presence of a sulphate in the portion on which muriatic acid did not act. Hence I concluded that the ashes of corn contain phosphate and carbonate of lime, and a sulphate, probably sulphate of lime.

According to this analysis, the constituents of the yellow Indian Corn, will be as follows:

	Common State.	Dry.
Water, - - - - -	9.00	0.000
Farina, or Starch, - - - - -	77.00	24.599
Zeïne, - - - - -	3.00	3.296
Albumen, - - - - -	2.50	2.747
Gummy matter, - - - - -	1.75	1.922
Saccharine matter, - - - - -	1.45	1.593
Extractive matter, - - - - -	0.80	0.879
Cuticle and Ligneous fibre, - - - - -	3.00	3.296
	<hr/>	
	98.50	
Phosphate, Carbonate, and probably Sulphate of Lime, and Loss. }	1.50	1.648
	<hr/>	
	100.00	99.970

The powder of corn is a hygrometric substance, and the quantity of water in it after exposure varies with the state of the atmosphere. In some instances, when the atmosphere was moist, it would lose on drying 12 per cent. In other cases, the loss did not amount to more than half the quantity. I therefore took the mean.

The constituents of the *Virginia Corn* are the same as those above stated. But the proportion of zeïne is much less, the quantity from 100 grains, being so small as not to be weighed; and it is not a little remarkable, that it has a greenish hue.

It is known, that varieties of indian corn sometimes exhibit colours other than yellow. In some the colour is blue verging on violet, while in others it is red. The colouring matter of the former penetrates the whole substance of the grain, excepting the cuticle, which is transparent, and that part which is commonly called the eye; that of the latter resides altogether in the epidermis, the mass of the grain being white. These facts may be easily ascertained by immersing the grain in water and allowing

it to steep until it begins to swell ; the cuticle may then be separated without difficulty. I have made some experiments to determine the nature of these colouring matters. I have found that they are soluble both in water and alcohol when aided by heat, and the colours of the solutions are similar to those of the grains themselves. The violet or blue is rendered green by alkalies, and red by acids ; the red is much diminished by alkaline substances, while it is augmented by acids. With sulphuric acid it produces a superb crimson. Hence it appears, that the substances which colour blue and red corn are analogous to the colouring matters of red cabbage, litmus, violet, &c. By digesting a quantity of the coloured cuticle of red corn in alcohol, filtering and evaporating the solution, I obtained a minute portion of zeïne which had an olive colour ; that from blue corn was yellowish. In both instances the colouring matter remained in solution, in the small quantity of water which remained after the alcohol was evaporated.

From the products of this analysis it would appear, that the bitterish taste perceptible in bread which contains indian corn is owing to the extractive matter. The peculiar flavour depends in part upon this matter and partly upon the gummy substance and zeïne, though that of the latter is very faint. A spirituous liquor may be obtained from indian corn, and this is owing to the changes which take place in its saccharine matter. It contains no gluten, and is, therefore, incapable of going through the fermentative processes necessary to the formation of good bread. Hence it is, that, in making *brown bread*, as it is here called, it is necessary to mix it with rye-flour, and sometimes with the flour of wheat, both of which contain gluten, and are capable of fermenting on the addition of yeast.

Indian corn contains a large proportion of farinaceous matter, and this substance experience has shown to be very nutritive. What may be the effect of zeïne it is impossible to say, but in judging from its chemical properties, we should be disposed à priori, to say, that it is not easily digestible, as it has many of the properties of resins. It is probable that if indian corn were submitted to the same processes as wheat before it should be used as food, it would be equally nutritious, because the proportion of soluble and nutritive matter would be increased by the removal of its cuticle and fibrous substance.

In order that the reader may compare the composition of indian corn with that of the other grains, I shall subjoin the analyses of some of the latter made by European chemists.

1. *Farina of Wheat.* (a)

<i>Triticum Hybernum.</i>		<i>Triticum Spelta.</i>
Fecula, or Starch,	68.0	74.00
Gluten,	24.0 not dried,	22.00
Gummy Sugar,	8.0	8.50
Vegetable Albumen,	1.5	0.50
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98.5		105.00

2. *Farina of the Oat.* (b)

Fecula,	59.00
Albumen,	4.30
Gum,	3.50
Sugar and bitter principle,	8.25
Fat Oil,	2.00
Fibrous matter,	<hr/>

3. *Rice, Carolina.*

Water,	5.00
Starch,	85.07
Parenchyma,	4.80
Vegeto-animal matter,	3.60
Uncrystallizable Sugar,	0.29
Gummy matter,	0.71
Oil,	0.13
Phosphate of Lime,	0.40
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100.00 (c)

4. *Rye Meal.* (d)

Albumen,	3.27
Gluten, not dried,	9.48
Mucilage,	11.09
Starch,	61.09
Saccharine matter,	3.27
Husk,	1.38
Loss,	5.42
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100.00	

5. *Barley Meal.* (e)

Volatile matter,	360
Albumen,	44
Sacch. matter,	200
Mucilage,	176
Phosph. Lime & Albumen,	9
Gluten,	135
Husk, with Gluten and } Starch,	260
Starch, not quite free } from Gluten,	
Loss,	76
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(a) Vogel. *Annals of Philosophy*, II. 314.

(b) Ib. Ib. Ib.

(c) Braconnot.

(d) Einhof. (e) Einhof. *Thomson's Chemistry*, IV. 263, 5th ed.

Examination of Calculi from the sub-lingual gland. By J. GORHAM, M.D. &c.

IN May last, a gentleman 22 years of age applied to me for a swelling and soreness of the left sub-maxillary gland. The next day it had increased in size and was painful. On the succeeding day severe inflammation had taken place. The swelling on the left side extended to the parotid gland, which was much enlarged, and from the maxillary glands it passed around the chin to the glands on the right side. The parts immediately below the tongue were swollen and inflamed, the inflammation extended to the mucous membrane of the fauces and larynx, a sense of stricture was perceived in the trachea, which rendered deglutition both painful and difficult, and much constitutional irritation was produced. By active treatment the inflammation was lessened, and the symptoms were less severe the morning following. Towards evening of the same day two calculi were discharged from the sub-lingual gland; his fever immediately subsided, and in a day or two he was well. I passed a probe through the orifice, from which these stones passed, to the depth of an inch and a half in the direction of the left sub-maxillary gland.

Each of these calculi was of the size of a small pea, and the weight of both about 7 grains. They had a globular form, and their surfaces, which were of an uniform light yellow colour, were finely tuberculated. Internally they exhibited a pure white, and were composed of delicate concentric layers apparently homogeneous in composition. These masses were sufficiently soft to allow of their being divided without much difficulty by the nail.

In order to ascertain their composition, a fragment was powdered and put into nitric acid, in which when gently heated it dissolved without effervescence. The solution evaporated to dryness left a grayish white powder, without any admixture of pink colour. It was redissolved, and the solution, saturated with ammonia, produced a white flocculent precipitate, soluble in muriatic acid, and precipitated by oxalate of ammonia. A portion of the calculus rubbed with quick-lime gave no indications of ammonia. A third portion dissolved in acetic acid, gave a precipitate with solution of acetate of lead. A fourth exposed to the flame of a blow-pipe, became black, exhaled the odour of burning feathers, then turned white, but suffered no other change. The residue, dissolved in muriatic acid, was precipitated white by oxalate of ammonia.

From these results I concluded, that these calculi consisted of simple phosphate of lime and some animal matter.

Boston, Aug. 6, 1820.

Botanical History, and Medicinal Properties of the Trillium Erectum, &c. By Dr. STEPHEN W. WILLIAMS, M.M.S.S.

[Communicated for the New-England Journal of Medicine, &c.]

THE vegetable kingdom presents but few astringents of superior efficacy to the family of *Trillium*. Three species are found in this town, in marshy localities, at the foot of mountains, in the wood, and in swamps. They grow indiscriminately together, though the purple variety, or species is the most common, and its root is considered the most powerful, but for what reason I am unable to say; the *erythrocarpum* or *pictum* is next most abundant, but the *cernuum* is scarce. The simplicity and elegance of these plants, blossoming early in the season, have long attracted the notice of botanists; but few of our early plants surpass them in beauty. Elliot, in his sketch of the botany of South Carolina and Georgia, enumerates nine species which he has found in those States. Probably there is not a greater number in the United States.

That noted empiric, Dr. Henry of New York, in his *American Herbal*, has published some cases illustrative of the efficacy of the purple species, which he calls *Trillium rhomboideum*, nodding trillion, or beth, in suppressing active hæmorrhagy, &c. but as his book is written in so slovenly a manner, is so calculated to mislead the young botanist, and is so unscientific, it is presumed it is in the hands of few regular physicians. Some of his observations upon this plant, may, however, be relied on as correct.

We make use of the powdered root of the three species indiscriminately. The object of this paper is to invite the attention of physicians to the properties of these active and valuable medicinal plants.

The genus *Trillium* belongs to the sixth class and third order of the Linnean arrangement of plants, and to the 12th division, or order *Asparagi* of the natural order of Jussieu. The generic description as given by Elliot, is:—

<i>Calyx</i> 3 phyllus. <i>Corolla</i>	<i>Calyx</i> 3 leaved. <i>Corolla</i>
3 petala. <i>Bacca</i> 3 locularis.	3 petalled. Berry 3 celled.

The purple flower is probably the variety *atropurpureum* of the *erectum* of Willdenow, though Curtis calls the *atropurpureum* a distinct species. It is the *rhomboideum* of Michaux. The specific characters of *Trillium erectum*, as given by Elliot, is as follows:—

- | | |
|---|---|
| 1. Pedunculo inclinato, flore nuntanti ; petalis ovatis, acuminatis, planis patentibus, calyx latoribus, foliis lato rhomboideis, acuminatis, sessilibus. | Peduncle inclining; flower nodding, petals ovate acuminate, flat, expanding, wider than the calyx ; leaves wide rhomboidal, acuminate, sessile. |
|---|---|

Variety *atropurpureum*, with flowers large ; petals dark purple. Flowers May.

2. The *Trillium erythrocarpum* of Michaux is the *pictum* of Pursh, and the *undulatum* of Willdenow.

Elliot's specific character, is :—

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|---|---|
| Pedunculo recurvato ; petalis ovali-lanceolatis, acutis, recurvatis, calyce subduplo longioribus ; foliis ovatis, acuminatis base rotundatis, abrupte attenuatis. | Peduncle declining ; petals oval lanceolate acute, recurved, twice as long as the calyx ; leaves ovate, acuminate, rounded at base, abruptly attenuate. |
|---|---|

Leaves very wide for their length. When large almost cordate as mentioned by Michaux. *Peduncle* nearly an inch long. *Corolla* white with purple veins at base.

3. *Trillium cernuum* of Michaux. Specific description.

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| Pedunculo recurvato ; petalis lanceolatis, acuminatis, planis reflexis, calycem æquantibus ; foliis dilatato-rhomboides, abrupte acuminatis, brevissime petiolatis. | Peduncle recurved ; petals lanceolate, acuminate, flat, reflexed, as long as the calyx ; leaves dilated, rhomboidal abruptly acuminate, on short petioles. |
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The largest species yet known in this genus. Pursh says, the leaves are sometimes 9 inches wide ; peduncles 3-6 inches long, perhaps larger in large plants. *Petals* white. *Elliot*.

In all kinds of active hæmorrhagy I generally begin with doses of one drachm of the powdered root for an adult, in molasses or sweetened water, and repeat the dose according to the urgency of the symptoms. In extreme cases, I follow the prescription as often as once an hour, till the bleeding ceases. In common cases 3 doses in 24 hours will be sufficient. I give a cathartic after the use of the powder, though the constipation is not so great as after the use of cerussa acetate and other astringents. My friend Doctor Alpheus F. Stone, of Greenfield, uses pounds of this medicine in his practice every year, and thinks it is not surpassed by any astringent in the materia medica. He has seen great and

décided benefits from it in menorrhagia and hæmoptysis in repeated instances. Other practitioners in this vicinity make much use of it.

It is not exclusively for its powers as an astringent, that it is recommended to the consideration of physicians. It seems to be possessed of the property of arresting the progress of cutaneous eruptions in an eminent degree. Dr. Stone gave it to a patient labouring under menorrhagia, who had likewise been afflicted for years with an universal scaly eruption, which at times was very red and itching, and appeared to be of the scrofulous kind. She had made use of various remedies for it to little or no effect. After using the powder a few days, the eruption disappeared, and the surface of the skin was left perfectly smooth. In a few weeks the eruption returned, when she again resumed the use of the medicine, which in a short time cured the complaint. He has likewise used it with success in the case of his little son, who for some time had been afflicted with scrofulous eruptions. I cannot explain the *modus operandi* of this medicine in this complaint. It however, deserves further trial from physicians.

By the common people this root is used in parturition, and it is believed by them to be of great efficacy in expediting the birth of the child. It is generally known by them, by the name of birth-root, a corruption of beth.

The root of these plants, which is the only part used as a medicine, has not been subjected to chymical analysis. When green it is extremely caustic and pungent to the taste, but like the genus *Arum*, wake-robin, or wild turnip, it loses much of its causticity in drying. The dried root does not manifest much astringency to the taste.

The proper time for gathering it, is when it is in blossom, which, in this climate, is in the month of May. The roots would probably be more efficacious, like those of most perennial plants, if collected later in the season, but the plants drop their leaves soon after flowering, and it is impossible to find them long after this period. They should be washed, strung upon twine, or thread, and dried in the sun. Some divest the root of its fibres, but it is unnecessary, for they are equally efficacious with the body of the root.

Deerfield, Mass. May 27, 1820.

Case of Gun-shot Wound. By Dr. STEPHEN W. WILLIAMS,
M.M.S.S.

[Communicated for the New-England Journal of Medicine, &c.]

I PRESENT to my medical brethren, through the medium of the New-England Journal, the following case of gun-shot wound, partly at the solicitation of some of the physicians who were present at the operation, but chiefly that it may be of service in preventing surgeons from too early resorting to the operation of amputating limbs, before all other means of saving them are attempted. In the present case I should have been justified in removing the limb ; indeed had my patient died, I should have been justly censurable for not resorting to that operation. As the case terminated, it goes far to show the propriety of delaying so important an operation to the patient as that of removing a limb. The best surgeons are those who prevent the necessity of capital operations.

Case of Gun-shot Wound.

Friday, December 5th, 1817. J. M. aged 17, a strong muscular youth accidentally shot himself while setting his gun over a log. The trigger struck the twig of a bush, and the gun went off with the cock half bent. The muzzle of the gun was within a very few inches of him, and the charge entered his left arm in an oblique direction. The external wound was about two inches above the bend of the elbow upon the inside of his arm, and it was about the size of the muzzle or mouth of his gun. It was about two o'clock in the afternoon when he wounded himself. He was above two miles from home, in company with his brother. His brother was some distance from him when he heard the report of the gun, and he supposed that he had shot at a squirrel ; he was soon, however, convinced from his cries that he had wounded himself, and immediately ran to his assistance. Upon stripping off his coat he found that the wound bled most profusely. He very judiciously tied it firmly with two large handkerchiefs, and helped him into his cart, which he had with him, and carried him home. He immediately sent for me, but, as I lived some distance from him I did not see him till four o'clock. I found his countenance pale and ghastly from the loss of blood, and he complained of great pain. There was no pulsation at the wrist of the wounded arm, and I concluded that the brachial artery must be wounded. The pulsation was extremely feeble at his other wrist. Upon throwing off the handkerchief from the

wound, and removing the clots of blood, it bled most profusely. I immediately applied my tourniquet high up the arm upon the course of the brachial artery. The arm was very much swollen from the internal bleeding, and I succeeded with great difficulty in suppressing the hemorrhage by pressure. I examined the wound by introducing my fore-finger, but could not reach the extent of it.

The gun was charged with shot, the whole of which entered the wound, together with the powder, wadding, and a piece of the coat, and destroyed the artery, muscles, and every thing before it as far as the charge extended. The wadding and piece of coat were taken out in the woods before I saw him. Supposing that amputation must be performed, I did not feel disposed to undertake it till I had advice and assistance. I lightly dressed the wound, still continuing the tourniquet upon the artery, and sent for my father and nearest medical friends. Some of them not being at home, they did not all arrive till after nine o'clock. After having examined the wound, we concluded, that, instead of amputating, I had better cut down and endeavour to find the wounded artery and secure it by ligature. I accordingly made an incision six inches in length, removed an immense quantity of clotted blood, powder, shot and other extraneous matter. I had some difficulty in discovering the artery among the blackened, lacerated and distorted muscles. It was completely destroyed for more than four inches. I discovered it high up in the arm, seized it with the tenaculum, and secured it by ligature. I then removed the remainder of the shot, many of which were battered against the bone. The wound still continuing to bleed from the lower part, from smaller arteries anastomosing with the trachial, I sought for the artery at this place, and discovered it just above the bend of the elbow, and secured it. What was very remarkable, the nerve which accompanies the artery in the same sheath, was completely denuded even of its fascia, for the space of four or five inches, and *unwounded*. The wound was cleansed, and the lips of it brought out in close contact, and retained in that position by strips of adhesive plaster; dry lint was laid on, and the roller bandage applied. The patient was put to bed, and cordials and an anodyne administered. Although he lost but little blood during the operation, he was much exhausted from his previous loss, and his pulse, to use the language of one of the medical assistants, "resembled that of a patient in the last stage of typhus."—He passed a comfortable night, and took cordials and light food frequently.

6th. Pain increasing about seven o'clock in the morning. I saw him about noon; his arm was considerably swelled below

the elbow. He had some pain in the elbow-joint, and in his hand ; his arm was comfortably warm, and he had the motion of his fingers, only complaining of some numbness in his thumb and fore-finger. I omitted to mention that the biceps muscle, except being denuded of its fascia, and blackened by the powder, was not lacerated or otherwise injured. Pulse much the same as last night, 120 and feeble. I removed the roller bandage, which was rather too tight, and was discoloured and stiff from an inconsiderable hemorrhage from the wound, and substituted the eighteen-tailed bandage for the convenience of dressing. I did not disturb the other dressings. I directed fomentations of hemlock (*Pinus canadense*) to the arm below the wound and to the hand, and afterwards frictions with spirit, vinegar and salt, and subsequently to wrap the arm in flannel. As he had had nothing pass his bowels I directed an enema of thoroughwort (*Eupatorium perfoliatum*) and directed the use of light nourishing food frequently.

7th. Passed a restless night. The fomentations had increased the pain, which was, however, relieved in his hand and fore-arm, merely by the application of spirit and vinegar. The wound was tumid and painful. Pulse about 112, and fuller than it was yesterday. Countenance a little flushed. A slight stool by injection. Removed the dressing and found the wound had begun to suppurate. Dressed it in the same manner as at first.

8th. Passed a comfortable night. Considerable warmth and feeling in his hand. Wound suppurating rapidly, but the discharge offensive, as I had reason to expect. I discovered a slight vesication at the extremity of one of the strips of adhesive plaster, which I imputed to the plaster. Gave him a dose of mild aperient physic, as his injections had not operated favourably. Pulse 110. Gave him bark in decoction and wine.

9th. Discharge from the wound profuse and very offensive. Numerous vesications in the vicinity of the wound. The naked nerve, as large as a crow-quill, swimming in offensive pus. Considerable warmth and action in the hand and arm. Sprinkled a little powdered nitrate of potash into the wound, agreeably to the plan of Dr. Cuming, mentioned in the London Medical and Physical Journal, in commencing sphacelation, but the parts were too irritable to bear it. Applied the carrot poultice. Continues the bark and wine liberally, and nourishing soups. Pulse 100. Countenance a little flushed, but he is not very feverish. Tongue but little coated.

10th. Discharge from the wound profuse and intolerably offensive. Vesications numerous, and sphacelation extending rapidly. The wound is sloughing fast. The patient feverish and fretful,

restless and uneasy. - Pulse 90 and full. Applied the malt and yeast poultice round the whole circumference of the arm. Takes liberally of the bark and wine. Repeat the poultice twice in twenty-four hours. I perceived a pulsation at the wrist of the wounded arm. It was so perceptible that my father counted it. This was from the anastomosing vessels becoming more dilated.

11th. Passed a very uneasy night. Complained much of the second poultice, which distressed him to his fingers ends. It was put on too cold. Discharge from the wound much less offensive. The sphacelation is arrested. Pulse 90. Continue the malt poultice and the bark and wine.

12th. Wound suppurating ; granulating freely ; closing at the top. No traces of mortification. Appetite pretty good. Tongue not much coated. Pulse 90.

13th. The ligature at the upper part of the wound came away. Wound suppurating freely and casting off large pieces of dead flesh.

14th. The ligature at the lower part of the wound came away. Granulations abundant on the upper and outer part of the wound. A little oozing of blood from the granulations. The ulcer is now somewhat irritable. The extent of the surface of the wound not much diminished, but there is not much smell from it. He is inclined to sweat at night. I added elixir vitriol to his bark and wine. Appetite good. He is a little peevish.

15th. The wound is now clear, and the pus discharged bland. Pulse 80. Appetite good, and strength increasing. Two shot came from the wound.

16th. Wound healing ; two shot came from it. Pulse 80.

20th. Wound for three days past doing well. This day labouring under constitutional irritation. Countenance flushed, and tongue a little coated. The ulcer is irritable, but discharges bland pus. Discovered a tumour just above the wound and below the axilla, which is sore to the touch.

22d. Tumefaction above the wound disappearing. Took out four shot from the wound at this dressing.

23d. Wound irritable ; considerable soreness above it ; it bled freely upon wiping it with dry lint. Patient fretful.

24th. Wound still irritable. Soreness and tumefaction at the axilla diminished. Dress with simple cerate.

25th. The lower part of the biceps muscle, which is naked, this day put on a very unfavourable appearance. It was black and resembled commencing sphacelation. The patient had indulged too much in eating. Applied again the malt and yeast poultice. Pulse a little excited. Directed to abstain from animal food. Use the bark and wine freely.

26th. The wound sloughing extensively. Continue the poultice.

27th. The appearance of the wound more healthy, though it discharges great quantities of laudable pus. Applied pledgets of lint spread with unguent. *ē gum. elemi* over part of the wound, and continued the poultice.

After this time my notes were discontinued. The patient continued to recover, and the wound was completely cicatrized in the month of January, and he was able to resume his occupation (that of a joiner or house carpenter,) in the month of February.

His arm has not withered, and except a little coldness in the limb, and a little numbness in his thumb and fore finger, he feels no inconvenience from the wound. He is able to do his day's work, and the pulsation is distinct at the wrist of the wounded arm.

Deerfield, June 10, 1820.

Case of Anthrax.

[Communicated for the New England Journal of Medicine and Surgery.]

MESSRS. EDITORS,

IF the following narrative of simple facts observed in a case of Anthrax, should be thought of the least use to the young practitioner, you are at liberty to give it a place in the New-England Journal.

Mrs. H. aged 68, on the 5th of October, 1819, discovered a small swelling situated directly over the first cervical vertebra, which she conceived to be (to use her expression) a common bile. The pain, she informed me, was quite severe at first, darting through and from the swelling in various directions.

In this situation the tumefaction continued to advance, extending from its centre in every direction until the 15th of the same month, when I was called to see her. On examination the tumour appeared prominent about half an inch from the adjacent integuments, its figure rather oblong, and about three inches in diameter; exhibiting a face perfectly flat, and of a deep purple colour. The cuticle was entire throughout the whole extent of the tumour, and crispy to the feel as though it had been seared with a hot iron. Underneath the cuticle the texture of the tumour was soft and spongy, but firmly attached to the subjacent parts. Being

perfectly sensible as to the nature and tendency of the disease, my first object was to counteract its morbid progression, which it was feared would soon end in extensive mortification. For this purpose I directed the application of carbonic acid gas, by applying to the tumor a poultice, prepared in the following manner. A sufficient quantity of oat meal was wet with beer, a little warm, to which was added one table spoonful of yeast, and one tea spoonful of carbonate of potash. Fermentation begun soon after its application, and directions were given to change the poultice every 6th hour. Slight febrile symptoms, attended with emaciation and loss of appetite. The tongue was dry and covered with a yellow scurf. Pulse small, weak, and considerably accelerated. Feet and legs inclining to be cold, and general debility. An emetic of ipecacuanha was ordered to equalize excitement, and prepare the stomach for the reception of future remedies. After which, an anodyne with a liberal quantity of wine was directed.

17th. On removing the poultice, the tumour presented a broken ragged surface, and was somewhat increased in size, of a dark purple colour, and from its broad surface issued a thin ichorous matter of the colour and consistence of whey. The pain was extreme, embracing the whole head; and general debility more apparent. I now directed the tumour to be washed once in six hours with a strong solution of sal-ammoniac and vinegar. Continue the same poultice, and give internally one tea spoonful of pulv. cort. peru, in two thirds of a glass of wine every 4th hour, with anodynes night and morning.

18th. Found the tumour enlarged in circumference, and of the appearance of an honey comb; from every opening of which, on pressure, flowed a small quantity of purulent matter. Pain still severe.

The face of the tumour was now deeply scarified, and cort. peru, was applied, and over this the oat meal poultice. Bark and wine internally as yesterday.

19th. The tumour is considerably increased since yesterday, extending to the occipital suture, and diagonally almost to the right ear. Although extensive sloughings had taken place from the scarified parts, yet no line of separation was discoverable between the diseased and sound parts. The whole diseased mass was still firmly attached to its connecting integuments. The patient at this time was comatose, excepting at intervals, when the severe pain would arouse her to a sense of her deplorable situation. I now removed the hair, and applied a blister, three inches in breadth from its margin, completely around the tumor. The opening in the plaster was now scarified, and filled with cort. peru,

and over these the fermenting poultice. A tea spoonful of the fine ground bark was now given in a full glass of wine every two hours, with anodynes as before.

20th. Found the blister had vesicated, and the line of separation distinct. Comatose symptoms subsided and pain much less severe. I now removed as much of the dead flesh as could be effected without giving pain, filled the sore with cort. peru, and dry lint, and applied strips of adhesive plaster. Continue bark, wine and opium as yesterday. This mode of proceeding was pursued until the 24th, when an entire sloughing took place, and left a deep simple ulcer nearly six inches in length and three inches in breadth. The ulcer was now filled with dry lint, and the adhesive plaster applied in such a manner as to contract the edges of the sore as much as possible. Continue bark and wine, and omit opium. This method of dressing was continued until the cicatrix was formed, which took place in about five weeks. During the healing of the ulcer some fungus flesh made its appearance, which retarded the growth of the new granulations, and required the application of gentle escharotics. Burnt alum and red precipitate were occasionally sprinkled into the sore, as also peruvian bark. But of all the remedies used in this case to remove fungus, none were attended with more decisive advantage than burnt saffron. This simple article, after being scorched, and finely powdered, was found to remove all preternatural appearances, tended to diminish fetor, and greatly assisted the formation of the cicatrix.

The carbonic acid gas is undoubtedly a very powerful anticeptic, and ought in no similar case to be omitted. But its powers in this aged broken constitution were not sufficient (although aided with so liberal a quantity of bark and wine,) to produce that degree of excitement in the contiguous sound parts, necessary to throw off the mortified mass, without the cooperative powers of the blister. It is evident, that death was prevented in this case, by the seasonable application of the blister.

Opium I conceive was a powerful auxiliary, by granting to the patient a respite from extreme suffering, and thereby giving the prostrated powers of life an opportunity to resume a portion of excitement so much exhausted by great pain, and by assisting to restore that equilibrium of action in the system on which health so essentially depends.

A CONSTANT READER.

Oxford, Mass. June 27, 1820.

Clinical Observations. By CHANDLER ROBBINS, M.D.

[Communicated for the New England Journal of Medicine and Surgery.]

HÆMOPTYSIS.

MC GREGOR, Æt. 22, Hatter.—July 20. In bed—debility extreme—night sweats have been profuse—sleeps ill—skin hot. Expectorates vast quantities of purulent matter mixed with arterial blood. Cough almost constant, day and night—great pain in the left side—respiration quick and difficult—eyes clear and glaring—countenance anxious and sunken—mouth seldom closed—tongue thickly coated, light brown—pulse 130, small and quick—bowels natural.

He had a good constitution, but has spoiled it by intemperate drinking. None of his family or relations have died of Phthisis; has followed his trade many years, and never been ill till about a fortnight ago, when he was attacked with a violent cough and spitting clear blood in great abundance. Cough had been coming on for 6 weeks, but too mild, as he thought, to require attention. Has been in bed 8 days—growing progressively worse. Can assign no cause for his complaints.

Stat. applic. vesicat. ampl. pectori. Capt. ter indies cochlear. parv. ij hujus mist. Acidi. Sulph. dilut—et syrup. simp. āā 3ij Bibat decoct. aven. ad libitum.

21st. Pain in the side and dyspnœa relieved—bowels costive—other symptoms as yesterday.

Capt. stat. Sulph. Magn. 3ss. Magnes. gr. x. M. Cont. pot. et mist.

July 22d. Stronger and better. Pulse 129. Other symptoms as before.

Cont. mist et decoct. Lavet. fac. et man. aqua frigida ē aceto.

July 23d. Slept well—sweat less than usual—feels stronger—heat of the surface diminished. Expectorates freely a purulent matter which sinks in water, but less blood—spirits better—tongue begins to clear—pulse 120—bowels regular.

Cont. omnia.

July 24th. Slept ill—coughed all night, and expectorated two wash bowls full of matter without blood.—Feels weak—otherwise better—pulse 100, soft and small.

Cont. mist. Habeat pil. opiat. h. s.

July 25th. Slept well—stronger and better in every respect—pulse 100—bowels a little costive—tongue coated.

Cont. mistur. et decoct.—et pil. opiat. h. s. R. Extr. Colocynth. comp. 3j—Extr. Hyosciami gr. xv. M. Div. in pil. æq. No. xv. Capt. unam cras mane.

July 26th. Convalescent—pulse 89.

Continuent. omnia.

July 28th. Continues better—pulse 80, weak and soft—tongue moist and clean—skin natural temperature—night sweats slight—Coughs a little, and expectorates freely—spirits fine—exercises a little within doors.

Capt. pil. opiat. nocte manequē pil. laxativ. pro re nata, et pulv. cinch gr. x. ter indies ex vin. 3ss. Cont. mistur. et exercit.

Aug. 3d. Had a bad night—coughed much, and feels weak this morning. Had his hair cut yesterday and took cold after it—tongue coated—pulse a little quicker and more feverish.

Omittr. Cinchon.—Cont. pil. et mistur.

Aug. 5th. Much better—no fever.

Rept. cinchon.—Cont. alia.

Aug. 8th. Very much better—walks out a little.

Cont. omnia.

Aug. 12th. Sent to the country in good health and spirits; but ordered to continue the pills, bark, and acid for a fortnight longer, and take regular but gentle exercise.

CYNANCHE TRACHEALIS,—OR CROUP.

David McLellan, Æt. 4.—Aug. 12th. Complains of difficult and hurried respiration, attended with the cough peculiar to this disease. The skin is excessively hot—face flushed—bowels costive—pulse 140—eyes suffused, and general agitation during and after a paroxysm of coughing.

He was yesterday morning, without any apparent cause, affected by a difficulty in breathing, succeeded after a short time, with restlessness and cough. Dr. L——, of the Dispensary, who requested me to attend this child, had given the mother a dozen powders, each containing v. grs. calomel, and ordered one to be given every half hour. Two had been taken without any effect, before my arrival.

Ordered immediately the calomel powders to be laid aside—took 3v. blood from the right jugular vein—applied a blister across the front of the neck, and directed a table spoonful of the following solution to be given every half hour.

R. Emet. Tart. gr. vj. Aq. Fontan. 3vj. et solv.

Aug. 13th. The solution procured an evacuation from the stomach and intestines, which afforded much relief—breathing less difficult—cough abated—skin hotter—pulse 140.

Took ʒiij. blood from the left jugular, which produced immediate vomiting, succeeded by throwing off of a thin membranous substance, probably from the trachea—directed the blister to be dressed with simple cerate—continue the solution.

Aug. 14th. Cough and difficulty of breathing worse—heat more intense—pulse 170. Slept ill last night—bowels costive.

Ordered an injection of salt and water, and gave calomel gr. xv.

Aug. 15th. Calomel and injection produced no evacuation till evening, when he had two stools, by which the heat, pulse, bowels. respiration, and cough, were all relieved.

Ordered xv grs. more calomel, and the solution to be continued.

Aug. 16th. Fever and cough gone—bowels rather costive—dejections green and slimy.

Rhubarb and Magnesia grs. xxv. to be taken at night, and a table spoonful of the following solution every 6 hours.

Decoct. Althææ. ʒviij. Syr. Scil. ʒij. Tinct. Opii ʒij. M.

Aug. 18th. No complaint but costiveness.

Repeat the rhubarb and magnesia. R. Fol. Sennæ ʒss. Super Tart. Potass. ʒj. Aq. Bul. lb. ij. M. cochlear. magn. omni trihorio sumend.

Aug. 20th. Discharged cured.

The fourth spoonful of tartar emetic solution operated well, and afforded relief. After that, he continued to take it till the time of my second visit, without any apparent benefit. Soon after the blood began to flow, the solution he had already taken produced its specific effect, and thus showed, that venesection was not only useful in reducing the general excitement, but in promoting the operation of other necessary remedies.

ORGANIC DISEASE OF THE HEART.

Gilchrist Smith, Æt. 39, Widow.—July 14th. I was requested by Dr. A—— to visit this woman. She lived in a narrow and dirty close, in High street, Edinburgh, and from her I collected the following history of her disease. About the beginning of last January she was attacked, while engaged in her usual occupation as a washerwoman, with a violent throbbing of the arteries about the region of the stomach. The liftings, as she called them, at her heart, were quick and frequent, and were increased much in rapidity and violence by the exertion of ascending the slight acclivity which led from her cabin to the High street, and the most trifling effort rendered the pulsations irregular and fluttering. Her spirits were variable. Respiration was short and difficult. She coughed and expectorated mucus mixed with

blood, and complained of a sense of weight and suffocation at the chest, which was increased when she assumed the horizontal posture. While in bed, she lay with least difficulty on the right side, which was generally the most painful, though the pain was by no means fixed. She had no appetite and ate almost nothing. Bowels were in good order, and the secretions generally healthy. Night sweats were frequent—urine of natural colour and quantity, and occasionally she was troubled with œdema of the feet, and pain in the right shoulder and arm. She had no thirst or fever—her tongue was flaccid, and in a degree paralytic so that she could scarcely articulate, and her whole frame became exceedingly weak and emaciated.

These symptoms continued without abatement till April, when she took her bed and sent for Dr. A.—— He bled her, and by pursuing a strict antiphlogistic treatment afforded her much *relief*, though he has called occasionally till within a few weeks, and has never considered her out of danger.

About 6 weeks ago all the symptoms we have enumerated returned with unusual violence—she became unable to lie down in bed, and since then the poor woman has not known the pleasure of resting her head upon a pillow ;—the little sleep she has got, has been in a sitting posture and often disturbed by coughing or frightful dreams. The heart beats with such violence that I can easily count its pulsations at the distance of several rods. Pulse 130, small, hard, quick, and wiry. Her countenance is anxious and sunken—mind gloomy ; bowels perfectly regular—night sweats profuse, and debility extreme—dyspnœa and cough violent, but no expectoration of blood—the lower extremities are swelled and the shoulders and joints painful.

Emplast. vesicat. pectori applicatur. Capt. acidi sulphurici dilut. gtt. xxx. 8^{va}. quaque hora. et hujus mist. 3i. ter indies. R. Tinct. Digit. Purp. 3ijss. Decoct. Althææ 3viij. M.

July 15th. She has not yet procured her medicines. The tongue is slightly coated—pulse quicker and harder—bowels regular.

VS. ad. 3xxv. Medicamenta ut antea.

July 16th. Extremely weak. Pulse 125, small, quick and hard. Had more sleep last night than any one night before for 6 weeks. Night sweats are abated, but alternate with chills. The violent beating of the heart continues to raise the integuments high above their usual level. Pain in the shoulder and arms continues—complains much of a sense of fullness and heaviness in epigastrio, and of sharp shooting pains in the stomach and bowels which she compares to those of a woman in labour. No appe-

tite—bowels costive—tongue a little dirty—spirits desponding, and countenance staring and anxious.

Habeat. sulph. magnes. ʒj. ex aqua. Cont. omnia alia.

July 18th. These two nights she has been able to lie down in bed and get refreshing sleep. Her sweats have been less profuse, but still continue to alternate with chills. Pulse 108, hard and quick—no appetite—spirits and cough better; and she feels stronger, so that she attempted to walk across the floor of her cabin, but found her ankles too weak to support her.

Cont. acid. Omit. mistur. digit. R. Decoct. Althææ ʒ vij. Syr. Scillæ ʒ ij. Tinct. Opii. ʒ ij. M. Capt. cochl. ij. ter quaterve. indies.

July 19th. Slept well—pain in epigastrio and cough relieved. A pulsating tumour extends high above the right clavicle which communicates to the finger pressing it a strong thrilling sensation. Yesterday evening she had a voracious appetite—to day she has none, and her spirits are much depressed.

Cont. acid. et mist. Rept. emplast. vesicat. pectori.

July 22d. Had a fit of vomiting last evening and felt ill after it—the heart beat with great violence, and the strength of the legs and joints seemed entirely gone—pulse 84. The vomiting, I was persuaded, could not, under existing circumstances, have been caused by the digitalis;—suspecting she had indulged in some unusual stimulus, I made the necessary *accusation*, when she confessed unblushingly, that she had “ta’n a wee drap o’ highland whiskey.” Her friends assure me, that she is not at all addicted to luxurious living, or intemperance of any kind; and the assurance is confirmed by her extreme poverty, which must have denied her any such indulgence whatever might have been her inclination.

Cont. omnia.

July 23d. Better—pulse, 100, full and soft. *Liftings* as before—cough gone—has occasional fits of tremor—pain in both arms—feet and legs swelled—bowels costive.

Capt. pulv. rhei et magnes. cochlear. ij. mane vespereque Rept. mist. digit. et emplast. vesicat. Omit. mist. scill. Let the feet and legs be rubbed with hot vinegar and mustard.

July 24th. Very much better in every respect. Pulse 84.

Omit. mistur. digit.

July 29th. Has had constant nausea these two days—pain in the chest, and cough begin to return—pain in the arms exceedingly severe, sharp, and lancinating, so as to prevent her from sleeping, and their soreness extreme; they are considerably swelled, as also are the hands. The beating at the heart is more violent, and palpitation of the tumour above the clavicle more strong than ever. Pulse 84. She has no appetite, and her countenance looks anxious again,

R. Sp. Lav. comp. ʒss. Tinct. Opii gtt. xl. Aq. Cinnam ʒiss. M. cochlear. parv. ter indies sumend. Cont. fricat.

July 31st. Soon after I left her she vomited a considerable quantity of clear blood; syncope several times succeeded, and she found immediate relief from the cordial mixture. She has continued taking it as directed, and feels much better than for weeks past. Pain in the arms gone—strength, spirits, and countenance much improved. Pulse 96—tongue clean—bowels regular.

Cont. mistur.

Aug. 1st. Vomited a little last evening, and slept well after it. Was so hungry in the night, that she rose and made quite a feast, on which she slept well till morning, when she ate her breakfast with good appetite. She feels much stronger than yesterday and better every way. Her spirits are fine, and she thinks the cordial drops have removed her complaints. The palpitation above the clavicle is scarcely perceptible—morbid action of the heart ceased. Pulse 84, natural—tongue clean—bowels regular—feet continue a little ædematous—urine has never been much increased in quantity or changed in colour.

Cont. mistur.

Aug. 3d. A little soreness in the arms and swelling of the feet are the only remains of her complaints. She walks about without difficulty, and rises a hill without exciting palpitation of the heart. She washed a few clothes yesterday, and her spirits and appetite are good to-day.

Cont. mistur.

Aug. 9th. She is as well as ever in her life, and has no one symptom of her complaints remaining.

Sept. 18th. Has had no return of her complaints.

During her illness she had no syncope except after vomiting on the 31st of July; and her bowels were, with few exceptions, perfectly regular. The urine was a little increased at first by the digitalis, but none afterwards. The pain in the shoulder continued through the whole, as also the soreness of the arms and the pulsation in the region of the heart.

The DIAGNOSIS of the diseases of the heart is sometimes difficult; but no case could be more clearly marked than the one we have related. Constant Dyspnœa indicates rather HYDROTHORAX than an organic affection of the heart and the difficulty of lying in a horizontal position is also supposed to be a diagnostic symptom of water in the chest; but it is evident, that these and most other symptoms of hydrothorax may be caused by an effusion of water in the pericardium which had undoubtedly taken place in this individual at a certain stage of her complaint. The distinct symptoms, however, of these diseases are so well known, that they cannot at this day be confounded.

Internal pulsations and external pulsating tumours are no less a mark of organic affections of the heart than of ANEURISM OF THE AORTA, and œdematous swelling of the extremities is as peculiar to the former, as dysphagia is to the latter.

It is somewhat more difficult to decide the precise change which took place in the structure of the organ. *Ossification* and other affections of the valves of the heart—pulmonary artery and aorta may be pretty accurately distinguished from all other diseases of that organ by an irregular, intermitting, indistinct, small, hard and thrilling pulse—a few sharp pulsations in quick succession, succeeded by softer and more tremulous strokes—an obscure and laborious action of the heart and a want of synchronism in the pulsation of the heart and arteries—a fullness of the veins, and occasional lividity of the face and hands.

Simple dilatation of the heart is indicated by a soft and full pulse—equable in its motions, and never intermitting, and by a still greater obscurity without the labouring in the actions of the heart—rendering it almost imperceptible by the touch.

A small and hard pulse on the other hand—never intermitting, and accompanied by violent and painful palpitation, may be regarded as diagnostic symptoms of an *adhesion of the heart to the pericardium and effusion of water within its cavity.*

The disease, then, the history of which I have related, was an effusion of a watery fluid between the heart and pericardium, succeeding inflammation of those organs; and if the details of the case are accurately examined, it will be no difficult matter to designate the time when the successive stages of the disease occurred.

RHEUMATISMUS.

William Reid, Æt. 45.—July 12th. Complains of violent pain in the right leg, from the knee upward.

This leg was broken some years ago just below the great trochanter and has been crooked and shorter than the other ever since. The day before I saw him he had severe wandering pains in this leg, which, towards night became fixed in the upper and front part of the thigh, and increased so much in severity that he had no sleep, and finding it impossible to lie in any position in bed, rolled all night on the floor in great agony. Functions generally regular.

Applict. fricat. (ex sinap. ē. aceto. ferv.) parti dolenti. R. Gum. Guiac. pulv. ʒj. Pulv. Ip. et. Opii ʒss. M. pro pulv. Let him have six in the day.

July 13th. Slept well last night—pain entirely relieved—he is returned to his business again.

Cont. pulv.

July 15th. Thinking himself well, he omitted the powders, and the pain is returned worse than before. It extends from the foot to the back, but is most excruciating where it was on the 12th.

Rept. fricat. R. Extr. Datur. Stramon. gr. ijss. Cons. Rosæ q. s. ut ft. pil. No. x. Capt. unam mane. merid. horaque somni.

July 16th. Pain almost entirely removed—there is still a slight dull pain along the leg, but he is much encouraged and delighted by the rapid and good effects of the stramonium. Pulse 80, good.

Cont. pil.

July 18th. Yesterday he got 12 pills more, each containing gr. ss. Stramon. Feels as well as ever, except, that a little uneasiness, still rests about the knee.

Cont. pil.

June 20th. Very well.

Cont. pil. ter indies—donec No. xij. sumend.

Sept. 18th. Mr. R. has had no rheumatic complaints since he took the stramonium, but has been in perfect health.

CASE II.

Euphemia Robinson, *Æt.* 24. Unmarried.

She was seized with rheumatic affection of the shoulders, which was obstinate ; after trying the common remedies without success, I gave her the stramonium pill for 4 weeks in succession, without the least benefit. At that time I left Edinburgh and requested Dr. A. to whom I resigned her, to persevere a little longer in the use of this plant. The event I know not.

CASE III. *Ĉ* EPILEPSIA.

John Millar, *Æt.* 57.—July 18th. For several years he has been subject to Epileptic fits, which have always recurred frequently, but more so lately than ever, scarcely getting through a day without one or two of them. Complains of violent rheumatic pains in the shoulders, back, and left thigh—he has also a large phlegmon on the right gluteus muscle.

Ordered a poultice to the phlegmon.

Capt. pil. aloet. No. ij. mane vespereque.—pluresve si opus sit. R. Extr. Stramon. Datur. gr. iv ss. Cons. Rosæ. q. s. ut fiat mass. dividend. in pil. No. viij. Capt unam 8^{va}. quaque hora.

July 20th. Much better in every respect. Has had but one fit.

Cont. pil. Stramon.

July 23d. Rheumatic affection completely cured ; as also the difficulty in the head. Has had no fit.

Cont. pil. in dies quatuordecim.

Sept. 18th. Has had no return of Rheumatism or Epilepsy.

This was a fine case for the stramonium. Its use in some rheumatic affections, particularly sciatica, has been very satisfactorily developed in several cases which have fallen under my own observation, and its efficacy in epilepsy is more generally known. It is a medicine used much more in Great Britain than in this country, and which ought to be used much more every where than it is. I can recommend it with confidence in no other form of rheumatism than *sciatica*, in which I have found it *always successful*, though in lumbago and other rheumatic affections, as in the case of Euphemia Robinson, it has often been given for some weeks without affording any relief.

DISEASE OF THE SPINE.

Lydia Childs, *Æt.* 15. Complains of numbness of the feet and legs—coldness of the feet and constant uneasiness and subsultus tendinum—these spasmodic affections are sometimes so strong as to raise her from her bed suddenly in the night, and prevent her from enjoying much rest in the day time. On examining the spine, a forward and a lateral curvature were found,—the former making an angle at the junction of the 2d and 3d dorsal vertebra, of 142° .

Made an issue on the right side of the diseased bones in the angle of the two curvatures, and ordered Fowler's mineral solution—and rest.

May 19th. Numbness of the feet and legs relieved—feels weak, and has a catching pain in her right side—feet remain cold, and the spasms continue as before—she has lost much flesh, but her countenance is more healthy, and her spirits better than when I last saw her. Stomach rejects all hearty food—bowels regular.

Ordered a crib to be constructed, as recommended by Baynton, and the horizontal posture on the right side to be strictly enforced. Muriatic acid was substituted for the solution.

June 14th. General health much improved—appetite good, and retains every thing on the stomach—affection of the feet and legs is entirely removed; but she sometimes complains of pain in her head, and feels, she says, as if she were *a cat*, and not a human being. Lateral curvature much diminished.

Made another issue on the other side the spine—ordered bark, and a diet chiefly of milk and lime water.

June 20th. Hearing last evening, that her brother had fallen into the river, Miss C. sprang suddenly from her crib, and feels quite ill to-day.

Continuentur medicamenta.

July 5th. Side curvature almost obliterated—complains of

pain along the spine, and want of appetite, though her general health is good, and she has no feeling of debility. She is very industrious—has made many play-things for her sisters, and worked several muslin caps and ruffs.

Ordered 5 drops of the muriate of lime, 3 times a day.

July 24th. Side curvature entirely obliterated—general health and appetite good.

Ordered external use of sea water.

Sept. 6th. Convalescent.

Ordered to omit the muriate of lime, and take 3 drops of Fowler's solution, 3 times daily, in an infusion of *Eupatorium perfoliatum*.

Sept. 25th. Complains of occasional blindness.

Repeat the muriate of lime instead of the arsenical solution.

In the month of October, I left her convalescent—no trace of the side curvature remained, and the other was yielding fast to the position—issues—and tonic remedies employed. These remedies were ordered to be continued till next May, when she began to sit up, and gradually to move about the house and neighbourhood. It was about two and an half years afterwards, that I saw her; and seldom have I seen a more healthy countenance, or a more robust constitution than hers at this moment. The *disease* of the bones is entirely cured, but a little curvature remains, which will be permanent. She says that she experienced no inconvenience from drying up the issues at the end of six months, and she has not had an hour of any kind of illness since.

Boston, Aug. 1820.

Case of Uterine Polypus. By THOMAS CHADBOURNE, M.D.

[Communicated for the New-England Journal of Medicine, &c.]

THE occurrence of Uterine Polypi is so rare, and operations for a radical cure so frequently unsuccessful, that every fact relative to this subject, should be faithfully recorded. The subject of the following case is about 30 years of age; she was delivered of her first and only child, in February, 1812. The labour was instrumental and severe. Placenta did not separate as usual by the contractions of the uterus, but was removed by the hand. In the fall of the year 1817, after several months of slight indisposition, attended with uterine disturbance, the abdomen began to enlarge as in pregnancy—the periodical discharges were not only increased, but there was a constant discharge from the

vagina, resembling whey, amounting to half a pint daily. The breasts became enlarged and secreted milk. She continued able to attend to her domestic avocations until November, 1818, when she experienced at short intervals bearing down pains. The complaints from uterine irritation continued to increase; pain or uneasiness, and weakness of the loins, and increased serous discharge. The muscular power of the uterus also increased with the general excitement of the system, until a tumour was delivered from the womb, and found lying in the vagina. Her sufferings at this time were very severe—the urine was drawn off for a long time with the catheter—the discharges became foetid—the tumour sphacelated, and was taken away in small pieces. She got better and removed to this town. But she enjoyed but a short interval of health—the disease soon reappeared. I first saw her in February, 1820. For three months she had had regular pains, which continued two or three hours daily. I found on examination, a tumour, smooth, and of the consistence of liver pushed down into the pelvis, occupying its whole cavity, and beginning to protrude forward under the os pubis. The pains were so powerful as often to express blood from the tumour. The pressure was so great on the rectum and urethra, that it was with the utmost difficulty any thing could pass. She was in the habit of relieving the latter by pushing up the tumour with her fingers. The daily paroxysm of pains was generally succeeded by vomiting—they resembled more the constant bearing down produced by Ergot, than the common labour-pains. March 22d, a ligature was carried round the tumour by means of two silver canulæ, about 12 inches in length. They were introduced in contact as far as possible toward the root of the polypus, being previously armed with the ligature. One was then held stationary by an assistant while I carried the other round the tumour. This was not so easily accomplished as was anticipated. It induced severe uterine pains, and although the polypus itself seemed neither insensible, yet owing to the small space, and tenderness of the parts, the patient was subjected to much distress. The ends of the ligature were now drawn through a small double canula, one third of an inch long, and so large as to be easily slipped over both the others, and by means of a suitable wire, was pushed quite to the upper end of the long canulæ. The ligature was now daily tightened in the usual manner, and in a week it came away with a portion of the tumour. During this time the constitutional derangement from the irritation of the ligature, and frequent bearing down pains, was alarming. She required anodynes in large doses—there was great swelling and inflammation of the external parts—and we were under the necessity of again having

recourse to the catheter—the discharges were profuse, and very offensive. The relief experienced from the operation was merely temporary. Uterine pains in a few days succeeded, and more of the tumour again presented. The ligature was applied as at first, but during the night the pains were so powerful, that a portion of the tumour was protruded nearly the size of a child's head, and the part encircled by the ligature quite external—a ligature was now tied as high as could be with the fingers, to prevent hæmorrhage, and all below was immediately cut away with the scalpel. The patient appeared so nearly exhausted with profuse discharge and protracted suffering, that it was considered improper that any further attempts should be made, until the pains and inflammation should cease, and the febrile commotion subside. The 5th of May, I again applied the ligature and removed the third and last portion of the tumour, which produced less pain and irritation than at any former operation.* The present state of her health, (August, 1820,) although not good, is such as to admit of her regularly attending public worship several miles, and of doing much of her domestic work. Her appetite and strength has returned—the catamenia has reappeared, and she is restored from a state of suffering to the enjoyment of her family and friends. An operator on reviewing this sketch may think, that something more effectual might have been accomplished in the first instance—that the repeated application of the ligature was unnecessary, &c. ; but, a person who has not actually applied the ligature in this situation is not aware of the many obstacles he will meet with, and the pain and suffering to which he will subject the patient,—that he will be frequently foiled in this attempts, and obliged to desist and even to leave the patient for a time to recover from her state of exhaustion and fatigue.

I know of but few well authenticated histories of this disease. Denman's two cases are the most interesting. In one, I believe, (for I have not the case before me,) he applied the ligature six times, and the patient recovered and had children. A Professor at one of our Universities, to whom I applied for information on the subject, observes in his letter, that “two cases of the disease now under your care have come within my knowledge—in one of which, the tumour was expelled, and the uterus completely inverted by the force of the pains,—a ligature was applied, and the whole tumour, weighing six pounds, immediately cut away with the scalpel. The uterus was replaced and the woman got well. In the other, the uterus was also inverted, but the attend-

*The quantity of Polypus removed at the several times, although in a decayed state, was judged to be about 3 pounds.

ants not knowing the nature of the case suffered the poor woman to expire without any attempt to save her." This was also the fate of Mr. Hamilton's patient, mentioned by Burns. Cases are recorded of the ligature including an inverted portion of the uterus. This should be suspected when tightening the ligature produces *severe* pain and vomiting. Denman brought on these symptoms in attempting to extirpate a small Polypus, which just began to clear the *os uteri*, and every attempt to renew the ligature had the same effect. In six weeks she died, and the uterus was found inverted. Desault having applied a ligature round a polypus and cut it off the next day, found that a part of the *fundus uteri* was actually attached to the amputated portion. Baudelocque thinks, that some cases related as examples of amputation of inverted uteri, are merely polypi, accompanied with inversion.

Concord, N. H. August, 1820.

Cases of the Use of Nitrate of Silver in Leucorrhœa. By JOHN WISE, M.D.

[Communicated for the New-England Journal of Medicine, &c.]

CASE I.

E. W. aged about 20, had been, almost from the first appearance of the catamenia, more or less troubled with *Leucorrhœa*, occasionally with difficult, and for the most part, with irregular menstruation. During the same period, she had experienced a fixed pain, at times much aggravated, in the hypogastric region, extending to the situation of the right ovarium, and on examination a tumour, which I considered to be an enlarged ovarium, was discovered. The patient informed me, that it was, always, with the adjacent parts, extremely sensible to even the slightest touch. The stomach was irritable, she had frequent nausea and occasionally vomiting for twelve or eighteen hours; in the latter case, not unfrequently attended with severe head ach; the bowels much inclined to a costive state, and withal, she had, at times, slight attacks of hysteria, sometimes *per se*; at others, combined with the other symptoms. This person had been under the care of several physicians, and had taken emetics, purgatives, tonics; had been blistered, used electricity, and at length salivated without benefit. The painful enlargement of the ovarium was attended with a profuse serous discharge from the vagina, which at times was of a slight yellow

cast, and foetid smell ; but generally colourless and retaining only the usual odour of vaginal secretions. Attributing the fluor albus to the secondary affection of the uterus and vagina in consequence of the diseased ovary, I prescribed for the latter, pills of the extract of *conium maculatum*. The pills were made of 1 gr. of the ext. each, and she began with one pill a day, which were gradually augmented to three per diem, until about half an ounce had been taken. Under this treatment the soreness of the abdomen together with the tumour began to diminish, and at length totally disappeared. This took place about eight months after the commencement of the *cicuta*, but the medicine was not exhibited regularly during that period.

In a case somewhat similar, but greatly aggravated, which occurred to me two years before, the *cicuta* had admirable effects, and after several months of severe suffering by my patient effected a complete cure. This last was a married woman, and beside a *schirrhous* ovary, we had to contend with what was supposed an ulcerated uterus. Chalybeated myrrh pills were advised by a consulting physician, but not agreeing with the patient's stomach, she refused to take them and the *cicuta* had the honor of the cure.

In the case of E. W. as, though the diseased action had been general and not as yet subdued, after the ovarian affection diminished, she complained of a pain in the region of the liver and of a puffy swelling between the eighth and ninth ribs, attended with dry cough and hurried respiration, Ung. mercur. blisters, Tinct. digital. purpur. were prescribed with little benefit ; at length considering it a hysteric affection, medicines were mostly dispensed with, and the patient resumed her usual occupation and is now in tolerable health.

The head ach in this patient has been slightly mentioned ; it was frequent and severe, chiefly affecting the left frontal sinus, but at times the whole head ; at others, the occiput. Blisters, emetics, cathartics, tonics were made use of, but were unavailing. The extract of *stramonium* in doses of 1 gr. night and morning, soon removed the pain, and continues to do so, whenever it recurs. In a sister of this same patient it has had the same effect. During the continuance of these complaints, the *leucorrhœa* remained unabated ; having casually heard of the Nitrate of Silver being used with success in flooding after abortion and in menorrhagia, I resolved to try the effects of the remedy in the present case. I accordingly prepared with crumb of bread eighteen pills, each containing one twelfth of a grain of the nitrate of silver, directing her to take three of them in a day, and before the whole had been used every vestige of the complaint had forsaken her, and has not returned to this moment.

CASE II.

Mrs. J. aged about 35, who has been separated from her husband seven years, and is the mother of several children, has been afflicted with leucorrhœa, previous to and since her separation; is a woman of slender habit of body, and pale countenance, has a weakly, downcast look—complains of weakness of the loins, also of the stomach; a dragging sensation in the abdomen, referring to the situation of the uterus; has irregular menstruation, occurring once in two and three weeks; says the fluor albus continues during the time of menstruation. Has loss of appetite with indigestion, and aversion for solid food; is very subject to constipation of the bowels; has cough occasionally and pain in the left side. For some years past has been a subject of medical care for *apparent* complaints of the chest. Having experienced the favourable effects of the nitrate of silver in the foregoing case, I prescribed pills of the same, containing each one twelfth of a grain, and on taking *ten* of these pills, the discharge totally ceased without any unpleasant consequences, and has not yet returned, a period of several months. With the discharge the other symptoms subsided, and the woman, who before was pale and wan, is much improved in appearance and performs the labour of a kitchen maid with ease and cheerfulness.

Sherburne, August 22, 1820.

Some account of the late experiments on Syphilis, with remarks on the nature and treatment of Venereal Diseases. By JOHN WARE, M.D.

[Communicated for the New England Journal of Medicine and Surgery.]

NOTHING in medical science has probably been considered as so firmly established, and been so generally admitted, for so great a length of time, as the fact, that mercury was the appropriate remedy for the venereal disease; was a specific, and therefore certain remedy, and the only one upon which ultimate dependence was to be placed. It is not, perhaps, too much to say, that if any thing was considered certain in medical practice, it was this. Other remedies have had their advocates and their periods of partial adoption and apparent success, but their administration has been confined principally to the few individuals who have first brought them into notice, and their use has been discontinued

when those individuals have ceased to be engaged in practice. Surgeons have differed about minor points of treatment, they have disagreed with regard to the mode of administering mercury, the preparations to be preferred, and the extent to which it should be given, but there seems to have been no serious question as to the propriety of administering it at all. The venereal disease, unchecked by this article, was believed to move on with a sure, certain and accelerated progress, from part to part, from structure to structure—steadily destroying as it proceeded—never relaxing its hold—never retracing its steps, till the whole system was subjected to its influence and reduced to one common mass of loathsome disease. This is, in fact, now, the opinion of a majority of practitioners; it is only within a few years that there has been any doubt of it; and it is not a little singular, that the very first attempts made to test the accuracy of the received opinions, should have been supported by so many and such undeniable experiments and from various quarters, that they leave almost as little doubt that mercury is not necessary to the cure of the venereal disease, as there formerly existed that it was. This is true, however, in its full extent only with regard to British surgeons and those of our own country. In some other countries venereal diseases have been treated without mercury, and none of those horrible consequences have in fact followed, which would have been expected. This has been remarkably the case in Portugal,* and yet there the disease does prevail in a more aggravated form than in other countries. But such has been the prejudice in favour of mercury, that it would have been difficult for an English surgeon to believe that the disease in that country was the same as that which he had been accustomed to treat—he would either believe with Mr. Carmichael, that it was originally and specifically distinct, or with Mr. Fergusson, that it had grown milder and become modified by being suffered to take its natural course, through a number of generations, unchecked by any powerful remedies.

The way has been gradually preparing for that thorough investigation of this subject which is now taking place. Cases were met with in the practice of every surgeon, in which mercury was manifestly of no service and sometimes injurious, although every symptom indicated genuine syphilis. These when accurately inquired into, were traced to a different origin; and many valuable observations with regard to these—as they were considered—anomalous cases, were collected and recorded by different indi-

* *Medico. Chirurg. Transactions*, vol. 4. Mr. Fergusson's Paper on the Venereal Disease in Portugal.

viduals. Mr. Abernethy, particularly, distinguished himself in his work on diseases resembling syphilis, and though entertaining no suspicion that syphilis was curable without mercury, led the way to those results at which we have now arrived, by his accurate inquiries into those cases mistaken for it and treated by mercury, which yet were not so and did not require that treatment. They were partly the consequence, he believed, of distinct specific poisons, and partly arising from a disordered state of the constitution at large, or of some morbid propensities in the parts themselves, disposing them to take on unhealthy actions from slight causes. He did not pretend to be able to distinguish, from appearance alone, between the primary sores of syphilis and those of the diseases resembling it; but formed his judgment of their nature from the history of the case, the course it took, and the manner in which it was affected by medicine. Even the regular progression of the symptoms from bad to worse, he allows will often fail us in the detection of the real nature of the disease, though this had been so long considered as the special characteristic of genuine syphilis.

Mr. Carmichael, in his works on Venereal Diseases,* has followed in the same train of investigation, but has entered into the subject more minutely, and proceeded to discriminations peculiar to himself, the result no doubt of a great deal of accurate observation and of an acute sensibility to nice distinctions. In his last work, where he has reduced his ideas into a regular systematic form, he divides venereal diseases into four classes, whose characteristics he founds upon distinctive marks taken from the constitutional appearances, believing these to be more settled and more perfectly discriminated than the primary sores. But these he has likewise distinguished and arranged according to the secondary symptoms which they precede and produce. His classes are—First, The *papular venereal disease*, with papular eruption, accompanied by febrile symptoms—with excoriation of the fauces—rheumatic pains in the joints and iritis; proceeding from the simple primary ulcer without any specific quality—from excoriation of the glans penis, and from gonorrhœa.—Second, The *pustular venereal disease*, with pustules terminating in scabby ulcers, which heal from their margins—with white apthous ulcers of the fauces—pains in the joints, nodes, preceded by the primary ulcer with elevated edges, but without induration.—Thirdly, The *phagedenic venereal disease*, of which the primary symptoms are pha-

* It will be observed, that in this paper the general term *venereal disease* is used to designate all complaints produced by sexual connexion—whilst *syphilis* is restricted so as to include only the true Hunterian chancre, and the symptoms produced by it in various parts.

gedenic and sloughing ulcers of the penis—and the constitutional—the eruption of tubercles, accompanied by fever, terminating in ulcers, with thick conical scabs, healing from the centre and extending with phagedenic edges—ulcers of a phagedenic character in the fauces, sometimes affecting the larynx—ulceration of the ossa nasi—pains of the joints and nodes.—Fourth, The *scaly venereal disease*, or *syphilis*—in this, the primary symptom is the true chancre with hardened base, as described by Mr. Hunter, and the secondary symptoms are the eruption of scaly blotches—scaly from the first, either bearing the character of lepra or psoriasis *without fever*—excavated ulcers of the tonsils—pains of the joints and nodes. For the cure of diseases of the three first classes, Mr. Carmichael has been convinced that mercury is not necessary—that for the most part, especially in the phagedenic species, it is absolutely pernicious; whilst for those of the fourth class he has considered mercury as the appropriate remedy, and been of opinion that a case of syphilis could not get well without it. More recent observations, however, the result of which is communicated in an appendix to his last work, have convinced him that even true chancre may be healed without mercury, though he does not relinquish his opinion of the great efficacy of this substance in accelerating the cure. On this point, however, his experience has not been great; his views having principally been directed to the establishment of lines of distinction between syphilis and other venereal diseases, so as to enable surgeons to make the very important diagnosis between them.

So far, (for the recantation of Mr. Carmichael, has been of recent date) there seemed to have been no idea entertained that syphilis itself was curable without mercury; it was not even thought worthy of an experiment. Still, as it has been since ascertained, some individuals had been in the habit of treating all cases of venereal disease successfully without its exhibition, or had at least satisfied themselves, that the practice was safe. This was the case in Portugal, as stated by Mr. Fergusson. The same writer mentions also, the fact, that in the German regiments in the British service, some surgeons pertinaciously, even officially, refused to prescribe mercury in syphilis, asserting, that it was not necessary—"Such alarming conduct," he adds, "as being referable only to the most brutal ignorance, of course met with no quarter."—Mr. Rose observes, that he was assured by Dr. Banks, that the surgeon of one of the foreign regiments to which he himself was attached, used no mercury for several years in venereal complaints, and believed, that secondary symptoms did not occur, except where that medicine was employed. The possibility of curing a chancre without mercury, according to Mr. Guthrie, has

been well known to the surgeons of Paris, and the fact is demonstrated every year to his class by M. Cullerier, first surgeon to the venereal hospital at Paris.

Mr. Rose has communicated the results of his experiments on this interesting subject to the public through the *Medico-Chirurgical Transactions*; and being surgeon to a battalion of one thousand men, quartered in London, he has had ample means for investigation. For one year and three quarters, he treated his cases without mercury, and succeeded in curing all ulcers on the organs of generation produced by suspicious connections, and in the same manner, all the constitutional symptoms which ensued. The cases were one hundred and twenty in number, where he had an opportunity of ascertaining some months afterwards, that the patients were in good health.

Mr. Guthrie has likewise reported one hundred cases of venereal ulcers, under his own observation, which have got well without mercury, as well as all the secondary symptoms they produced. He states, in addition to his own experience, that he has seen the reports of four hundred additional cases, in different hospitals, treated on the same plan and with the same success.

Dr. John Thomson, author of the work on *Inflammation*, has pursued the same plan of treatment at the consolidated *Depôt Hospital* at Edinburgh Castle. Chancre and bubo in every instance disappeared under an antiphlogistic regimen, rest in a horizontal posture, and mild local applications, as speedily as they do when mercury is employed. The same course was followed, to the knowledge of Dr. Thomson, in the practice of two other military surgeons at Edinburgh. Constitutional symptoms followed in about one case out of ten, but were principally mild, and yielded to simple treatment, though not till after a long and tedious perseverance. The number of primary cases treated by Dr. Thomson himself, was one hundred and fifty-five; of these fifty-five had buboes, a considerable proportion of which suppurated, but were cured without mercury. Secondary symptoms afterwards supervened in fourteen individuals—one in the form of ulceration of the throat—two in that of ulceration of the throat with cutaneous eruption—ten in that of cutaneous eruptions alone, and one in that of cutaneous eruption, accompanied by iritis. But all these, like the primary sores, disappeared without the exhibition of mercury.

The publications of Mr. Hennen, likewise, support the same facts. His investigations have proceeded upon the same general principles, and have led to the same results—of one hundred and five cases, Mr. Hennen classes twenty as cases of true Hunterian chancre, which as well as the rest were treated with perfect suc-

cess. It is unfortunate that other gentlemen engaged in this investigation, should not have attempted, like Mr. Hennen, to select those cases which were probably true chancre, as objects of peculiar remark, since it is upon the evidence with regard to this disease that particular interest has been excited.

But the most satisfactory evidence of which we are in possession, is that afforded by the results of the investigation set on foot in the different regiments of the British army. An outline of the most important facts contained in the report, was published in the last Journal; but in order to offer at once a complete view of all the facts which have been collected, it will not be amiss to repeat in this place the same statement—and this statement is the more important, since it gives us a comparative view of the practice with and that without mercury. The whole number of cases was four thousand seven hundred and sixty-seven—"Of one thousand nine hundred and forty, which were treated and cured without mercury—ninety-six had secondary symptoms; but every man was fit for immediate military duty on his dismissal from the hospital. The average period for the cure of primary symptoms was twenty-one days—of secondary, thirty-six days—Of the two thousand eight hundred and twenty-seven remaining cases where mercury was used, fifty-one only had secondary complaints, but two men were rendered unfit to continue in the service. The average period for the cure of primary symptoms, was thirty-three days—of secondary forty-five." These cases, it is expressly stated, include not only "the more simple sores, but also a regular proportion of those with the most marked character of syphilitic chancre." In sixty-five of the cases of primary sores, and in twelve of the secondary symptoms, mercury was had recourse to on several accounts, either because the cure was protracted beyond the usual time, or when any impediment or embarrassment arose in the course of the treatment. There seems, however, every reason to believe, that the resort to mercury in these cases, though expedient, was probably not necessary, or at least not till after a longer trial than seemed to have been given of the antiphlogistic method.

It seems thus sufficiently established, that all ulcers on the organs of generation, succeeding to impure sexual connexion, are curable without mercury. The proof of this statement as exhibited above, is ample, and appears to be beyond dispute; and it is confirmed and corroborated by a number of circumstances, separate from that of direct experiment. The works of Mr. Carmichael, taken distinctly from the peculiar views which he entertains, contain a great weight of testimony which may be easily made to bear upon our subject. Being attached to a most ex-

tensive establishment for the exclusive treatment of venereal diseases, his opinion, as founded upon a very great number as well as a great variety of cases, has peculiar claims to attention. It is true, he has always proceeded on the presumption, that mercury was absolutely necessary for the cure of syphilis, though not for any other form of venereal disease, and the consequence has been, he has never made any full attempts to cure chancre without mercury. But when it is considered, that he has abstained from this remedy, in all cases where there were not the clear and distinct marks of syphilis, according to his rigid ideas of the nature of chancre, he has found only three clear instances of it, in a period of time during which he must have had many hundred cases of disease under his observation—when, also, we compare with this the estimate of Mr. Hennen, that twenty out of one hundred and five cases of his, were chancres—it seems almost a certain conclusion, that there must have been a great many instances of true syphilis, as most practitioners would have called them, among these complaints, which he has included under some other class and treated without mercury. And this supposition is not inconsistent with our allowing him all that acuteness and sagacity in the detection of nice and latent shades of distinction, of which he has given such abundant evidence. For when it is so universally acknowledged, and that too, by such men as Mr. Abernethy, that it is *impossible* always to decide with certainty, from appearance, alone, whether a sore be syphilitic; it would not be strange, that even Mr. Carmichael should have reckoned a multitude of cases, which he was able to cure without mercury, as not being syphilitic, especially since he all along has considered this substance as necessary to the cure of chancre, and, of course, recovery without it a proof that there was no syphilis in the case.

This, however, is only subsidiary and indirect evidence. Of the same kind are some facts in the history of this disease, which have been unaccountable upon the common doctrines, but receive a satisfactory explanation upon the newly adopted principle. The facts I allude to, are those relating to the various remedies that have at different times been in vogue for the cure of syphilis, and which we cannot doubt were often successful. How could it have happened, that it was as firmly believed in the sixteenth century, that guaiacum would cure the venereal disease, as it was in the eighteenth, that mercury would—if the disease really had not, in some cases at least, yielded to the power of the medicine or of the constitution?

It is natural to inquire, whether there is no source of fallacy in these results, whether no other account can be given of the facts

which have been stated—whether it really is true syphilis, as described by Mr. Hunter, which thus recovers almost spontaneously. The variety of character in the ulcerations which attack the penis, renders it impossible to say, with certainty, what is and what is not syphilitic in any particular case. Yet there is a moral certainty, that, out of several thousand, taken indiscriminately, as they occur, a considerable proportion at least will have been true syphilis. One who has studied this disease in the works of Mr. Hunter, and is also conversant with venereal disorders, as they exist, and have been described at the present day, must perceive, that there is certainly a great difference between the former and the majority of the cases of the latter. True chancre, it is agreed among the best surgeons, is now, comparatively, a rare disease, though probably the most common primary venereal affection in the time of Mr. Hunter. This comparative infrequency is not sufficient however, to render it probable, that this form of disease has escaped a fair trial among all the experiments which have been instituted.

Some difficulty arises in the consideration of this subject, in consequence of the very loose, varying and uncertain nomenclature of surgeons as it respects venereal complaints. The term chancre is made by one, to include every kind of ulcer on the organs of generation, even the slight ulcerations which sometimes accompany gonorrhœa—whilst by another, its application is restricted to those sores which have the hard, almost cartilaginous base, and the peculiar surface, which were considered characteristics by Mr. Hunter. By this indiscriminate technology, many diseases are described and received as syphilis, which have no claim to that title. Few complaints have been treated with so little discrimination as this, and the mass of practitioners, impressed with the idea that the venereal disease is only one, and that mercury is its specific remedy, have confined their attention to this drug, and the different modes of using it. With many, the amount of their knowledge and their skill would appear to be this—that every sore on the penis is a chancre, and can only be cured by mercury—that every running is a clap, and is to be treated by injections. The consequence has been, that different diseases are called by the same name, considered as the same, and treated as such; hence, there has been much contradiction and apparent inconsistency between different writers when treating this subject. It was a consequence of this inaccuracy of language, that Mr. Hunter was led so confidently to believe, that syphilis had been introduced and propagated at Otaheite by the European sailors; though it has since been proved, that it had never existed there at all; but that a different complaint, affecting likewise the or-

gans of generation, and probably of domestic origin, had and continues to prevail in that Island. The fact before mentioned, of the different judgment made by Mr. Carmichael and Mr. Hennen, of the proportion of instances of true chancre among the cases under their care, is also a consequence of this indeterminate and unsettled state of nomenclature.

Now this circumstance, undoubtedly, renders the subject under consideration liable to much mistake, and to a variety of incorrect views, when the observations of one man are compared with those of another, unless we first assure ourselves, that both use the same words in the same sense. But, though this uncertainty in language is the source of some doubt and confusion, yet its influence cannot have been so great, as to cause any fallacy in the results, which should induce us to lay aside the positive evidence we have, that syphilis can be cured without mercury, whilst we are deficient in any positive evidence that it cannot.

This I believe to be a fair view of the facts upon this interesting question—every one can judge for himself what weight he will allow them—they seem to me fully sufficient to establish the possibility, indeed almost the certainty, of curing all cases of venereal diseases without mercury. But allowing this to be proved—it is next important to inquire, whether there is any real advantage in the new method of treatment—as to the length of time occupied in the cure—the comparative liability to a return of the disease, either locally or constitutionally—and the state in which the system is left, after the disease is eradicated. It is obvious, that upon the decision of these questions, depends the expediency of the adoption of this practice in opposition to the mercurial. The great evils from syphilis arise, not so much in ordinary cases where the cure is speedy and complete; but in those where the disease is protracted, where the constitution is affected—where the disease becomes complicated with the effects of the remedies employed upon the general system, and terminates in a permanent injury of some of its important functions. If the method of treatment, newly adopted, lessens the danger in any of these respects, there can be no question of its superior recommendations.

As to the length of time occupied in the cure, Dr. Thomson states, that the primary sores which he has treated without mercury, have healed as speedily as any he has ever seen treated with it—but, that it seemed to him, some of the cases of constitutional disorder might have been made to recover more rapidly, by its administration in a small quantity. The army report, however, furnishes the most decided testimony, with regard to this point. From this source we learn—as has been before stated—that

the average length of time for the cure of primary venereal sores, without mercury, was twenty-one days—and for that of secondary symptoms, thirty-six days ; but, that, when mercury was administered, the average period for the primary disease was thirty-three, and that for the secondary forty-five days. This statement would seem to be conclusive, and so it certainly is, with regard to venereal diseases in general, but not syphilis in particular. For it is to be recollected, that in these experiments, no distinction is made of the different kinds of venereal sores, which were subjected to the new method of treatment—all were treated in the same way. Now, since it is allowed on all hands, that true syphilitic cases form but a small proportion of the sores which occur on the organs of generation it is very probable that all instances of chancre, may have really been longer in getting well under the new treatment, although when thrown in with the rest, the common average might give a shorter period than was necessary to their cure with mercury. If pains had been taken to select all such cases, and arrange them by themselves, the result might have been very different. And we may observe in confirmation, that where the sores did not heal in three weeks, or when some other untoward circumstances happened in the course of the treatment, mercury was occasionally resorted to, and this was done in sixty-five cases of the one thousand nine hundred and forty reported. Now it seems to me not an unfair conclusion, that the greater obstinacy of these might have arisen from their actually being chancres, and that this was the reason that mercury had some influence in these instances, though it had none in others. Besides, it seems to be a common opinion, even among the advocates of the anti-mercurial practice, that mercury, though not necessary to the cure of syphilis, does very sensibly promote it—and Mr. Guthrie remarks, that ulcers possessing the true characteristics of chancre required in general a longer time for perfect recovery than those which did not—that is, from six and eight to ten, twenty, and even twenty-six weeks—and he observes also, that he has reason to think, that almost all these protracted cases would have been cured in one half, or even one third of the time, if a moderate course of mercury had been resorted to after common applications had been found to fail.

The report of the army surgeons makes the proportion of cases of secondary symptoms, about one in twenty, when no mercury was employed, and about one in fifty-five when it was. Mr. Rose states the proportion to be much greater ; about one third, he observes, were subjected to some form of constitutional affection, though often so light as not to have been noticed, except it

had been particularly sought for. Dr. Thomson and Mr. Guthrie make the average of cases to be one in ten, reckoning none where the secondary symptoms were not of some importance—whilst under the use of mercury, Mr. Guthrie found the average of constitutional cases to be only one in seventy-five—founding his remarks upon two sets of cases; one of which gave fourteen out of one thousand four hundred, and the other, ten out of five hundred and twenty-one primary sores. Here is a prodigious difference in the proportion of secondary symptoms, even under the same method of treatment; and there seem to be no facts by which to come at any account of this singular circumstance. All the statements, however, agree in the general fact, that cases of constitutional disease are much more frequent when the mercurial practice has not been adopted, than when it has, and this is true of all venereal diseases—whether it be more strikingly so with regard to syphilis in particular, is left to conjecture, and can only be determined by such a selection and arrangement of cases as was before suggested, when speaking of the length of time required for recovery. But this greater number of instances of constitutional disease is more than counterbalanced, it would seem, by the mildness of the symptoms, and the facility with which they yield to the exertions of the system, for their removal, or to the influence of remedies. In Mr. Guthrie's cases, he particularly remarks, that the symptoms were all of a mild nature, in two instances only affecting the bones. In those of Mr. Rose, they were generally mild. "The constitutional symptoms," he observes, "were evidently not such as could be regarded as venereal, if we give credit to the commonly received ideas on the subject. Caries of the bones, and some of the least equivocal symptoms, did not occur. In no instance was there that uniform progress, with unrelenting fury, from one order of symptoms, and parts affected, to another, which is considered as an essential characteristic of true syphilis." From the report of the army surgeons, the same conclusion is to be drawn. All the cases treated without mercury perfectly recovered, both from the local and constitutional disease; and either were doing their duty as soldiers, or had been discharged for reasons unconnected with their previous complaints—whilst of those who had undergone the mercurial treatment, two had suffered so severely as to be obliged to relinquish the service—one in consequence of the injury to his constitution during the cure of primary sores, the other during that of the secondary symptoms—and in general, it is remarked, "that the secondary symptoms are more severe and more intractable, than when mercury had not been used for the primary sores."

The origin, nature, and relations of the constitutional symptoms arising from diseases of the genital organs, are extremely intricate and obscure, and seem scarcely to have received that thorough investigation from surgeons which so interesting a subject demands. It is the opinion of Mr. Carmichael, that their different species are dependent upon specific poisons, and originate from primary ulcers peculiar to each. In this opinion, few would be inclined to agree with him. It is not found, that secondary symptoms of any particular character, have been always preceded by a primary ulcer of the same kind—and the voice of the profession seems to be united against the admission of the principle defended by Mr. Carmichael, and laid down as the basis of his classification. It is, in the first instance, extremely improbable, that there should be three or four distinct species of morbid poisons existing and kept up in the organs of generation for any length of time ; and it appears to me, that we can account for the differences in the diseases with sufficient probability without having recourse to this supposition.

It seems probable, that syphilis, in the restricted sense in which I have used that word, depends upon a specific morbid poison ; that other primary ulcers do not, but are produced by those common causes, which might give rise to them in any other part. It is a well known fact, that a variety of venereal ulcers on the organs of generation were well known as existing long before the introduction of syphilis, and even so far back as the time of Celsus. The tender and delicate structure of these organs, renders them extremely liable to become ulcerated from sources of irritation, even slighter than those which would effect any other parts. Simple want of cleanliness will sometimes produce little sores round the glans of the penis ; and among prostitutes of the lower classes, where so little attention is ordinarily paid to this circumstance, nothing can be more likely, than, that sores should spontaneously take place, and from their manner of life, become ill-conditioned and unhealthy, as they would any where else on the body. I have known these organs in the female the subject of a disease very similar to aphthæ in the mouth, where there was not the slightest suspicion of venereal infection, but where they seemed to arise from a disordered state of the constitution, and yielded to remedies which amended that state. Now it is easily conceivable, that all these sores, from whatever cause, should be capable of producing other sores upon the penis, simply from the irritating quality of their secretions, while the character of the new sores would be determined, not so much by the nature of the matter applied, as the habit of body of the individual who was exposed to the infection. The case is similar to that of the

production of ulceration on the nipple, in consequence of aphthæ in the mouth of a nursing child. The matter applied calls the ordinary principles of action in the part, into operation, and the result is, a healthy, an irritable, a foul, or a phagedenic ulcer, according to the previous dispositions of the parts affected.

That ulcers are capable of producing a disease which does not in character exactly resemble themselves, is proved by many facts. A female who has only sores, will produce a running in a man, and the contrary. Two men may have intercourse with the same woman who is diseased, and the local affection in each shall be different; and on the other hand, another individual will have sores of precisely similar character, from whatever woman he derives his disorder, of which Mr. Guthrie has related a remarkable case. That gentleman, likewise observes, that—"Where many men have had intercourse with the same woman, they have not all had the same complaint, although one of the ulcers so originating, has become phagedenic, or sloughed, neither has the same woman herself suffered from this distemper; indeed the nature of an ulcer of either kind must, after a short time, effectually prevent any intercourse, and we often found, that their peculiar characters only appeared after the ulcer had existed for several days." Mr. Carmichael himself, virtually admits, that a true syphilitic chancre may take up the phagedenic action under a peculiar state of constitutional excitement.

As to the constitutional symptoms, it seems to me doubtful whether they are ever specific, even when arising from true chancre. This indeed seems a direct inference from the fact, that they arise indifferently from the various kinds of primary sores. Practitioners cannot distinguish between those which arise from syphilis and those which proceed from other ulcers. Symptoms exactly resembling them, and indeed in many cases confounded with them, are caused by a disorder of the digestive organs, as has been abundantly shown by Mr. Abernethy, and cases of the same kind are related by Mr. Carmichael. Local irritation of various kinds will produce an affection of the constitution similar in its general character to that occasioned by venereal diseases. This is exemplified in those instances, in which a transplanted tooth has produced symptoms mistaken for syphilis; and the same is true of many cases of disease produced by the nursing of a child. One fact of some importance in relation to this question is, that the number, degree, and extent of the constitutional symptoms is much influenced by the method of cure adopted. Where the simple treatment is pursued, where the processes of nature are not interfered with—the system sympathizes, if we may so speak, more readily with the local disease, but the general

affection is mild, and easily subdued ; whilst if mercury be given freely, the sympathy is interrupted, secondary symptoms do not so frequently occur, but they are more severe and more difficult of cure. This connexion between the administration of mercury and the secondary affection, appears to me to indicate, that the latter depends upon something which we do not understand in the state of the general system. In no other way can we account for the fact just stated, since the great influence which the mercurial action has upon the health, is well known. It will be found, I think, upon looking over records of syphilitic cases, that the long, protracted, obstinate instances of constitutional disease, have been invariably those treated very freely with mercury at the beginning, and followed up with the same article wherever there was any symptom of an increase of the complaint.

The causes, then, which determine one case of primary ulcer to be followed by constitutional symptoms rather than another, are not known ; they depend upon the influence of some external circumstances, or of some of the general laws of the system, of which we are at present ignorant. That they may depend upon something in the mode of treatment, the situation of the individuals, their manner of living, &c. seems probable from this circumstance, that in one regiment, out of twenty-four, there were four secondary cases—whilst in another, out of sixty-eight, twenty-eight of which were considered as instances of chancre—there was no return of the disease. Particular forms of disease are supposed by Mr. Carmichael to be prevalent, or even, in a certain sense, to be epidemic at particular times. The phagedenic or sloughing ulcer was at one time the prevailing venereal complaint at Dublin, whilst in the course of a few years its appearance was comparatively rare ; the chancre appears, from every account, to have been the most common sore in the time of Hunter, though now how small a proportion it forms of the cases which occur, has been mentioned more than once in the preceding pages.

It seems obvious to inquire before concluding, what are the ultimate results to which we are brought, by the investigations which have been carried on. If mercury is not *necessary* to the cure of venereal diseases, is its use to be therefore entirely relinquished ? The fact is, enough has not yet been done to state any thing definitely with regard to this question. We should suppose it almost impossible, that the profession could have been for so long a time mistaken as to the efficacy of this remedy, and attributed such decided powers to it, which it did not possess ; and in general, even those who have relinquished their belief in its specific qualities, are willing to admit the great advantages to

be derived from its administration under proper restriction and with due moderation. The evils produced from mercury on the constitution of patients, and in aggravating the disease, having arisen rather from the excess to which the mercurial action has been carried, than from the real deleterious influences of the remedy itself.

In treating cases of primary sores, it is by no means settled, that it is always best to proceed without giving mercury, but a great advantage derived from the new views entertained, is, that we never need feel anxious to hasten the exhibition of this remedy. There is no danger in any case from some delay; and we may always allow ourselves time to examine and inquire into the case, and assure ourselves that it is one in which this practice is the most expedient, before we begin it. Chancre is, not, as has been supposed, a rapid sore, speedy in its local progress and soon affecting the constitution—it is amply proved to be chronic in its nature, extremely slow and deliberate in its changes, and admitting consequently of a cautious method of procedure in its treatment.

When the patient is treated without mercury, for the venereal disease, it has been usual to confine him to his lodgings or to a hospital; and for the most part to the horizontal position, the diet has been of the simplest kind and principally in the liquid form, in short, the antiphlogistic regimen has been strictly enjoined. Medical means have been confined principally to general bleeding, where necessary, purgatives, diaphoretics, particularly antimonials, sarsaparilla, and other remedies of the same kind—whilst to the parts themselves, soothing, cooling, mercurial, astringent or irritating applications have been made, according to the state and stage of the complaint.

It has not been distinctly stated, that this strict attention to the antiphlogistic regimen is *essential*, when conducting the treatment upon the new system; if it is, it would be exceedingly difficult, for obvious reasons, to substitute it in private practice for the mercurial. This point requires farther examination, and is of considerable importance towards determining in what cases we should attempt the cure without mercury. Where, however, there are no objections arising from the difficulty or inconvenience of submitting to the strict regimen required, especially where there is any doubt that the primary ulcer is really syphilitic, it certainly appears adviseable, on every account, to refrain from the active practice to which we have been accustomed, and to leave the cure of the disease to nature, with such slight assistance as it may be necessary to give. Where no amendment is perceived, after a perseverance in this course for a few weeks, un-

less the sores are decidedly not syphilitic, a very gentle alterative course, has been generally found sufficient, and it is seldom any benefit is to be expected from a more violent affection of the system. It ought, however, to be particularly borne in mind, as an established fact, and as having an important relation to our practice, that the amendment and cure of a venereal disease, either in its local or constitutional form, by the use of mercury, is no proof whatever, that it is syphilitic, or that this remedy acts as a specific. It has been abundantly proved, that diseases not syphilitic, not even venereal, which have yet all the external appearance of being such, are benefited, and even entirely cured by the judicious administration of mercury. Yet how often is it confidently stated, as if a conclusive proof of the syphilitic character of a doubtful case, that it yielded to the use of this remedy. One circumstance in particular, appears to me to have occasioned some wrong inferences on this point, which is, that a disordered state of the digestive organs, especially when connected with any hepatic derangement, may be frequently much improved by a gentle course of mercurials; and when a local disease of any kind—such as a chancre, or other primary ulcer—an ulcerated throat or venereal eruption—is kept up by this cause, it speedily gets well when the system becomes affected by the medicine. No conclusion, therefore, can be more false, yet at the same time more common, than that this circumstance proves the disease to have been in the first instance venereal. It only proves, that the action of the medicine has removed that irritation which kept up the local disease—and this is exactly what takes place in syphilis—the mercury does not directly assist in healing the sore, it removes in some way that specific poison which by its irritation produced and keeps up its actions, and then having brought it within the ordinary laws of the system, leaves it to be healed up like any other ulceration. The disorder of the constitution in the former case, and the specific poison of the ulcer in the latter, act in the same way as causes of irritation to keep up the local disease, and are removed by the same remedy, yet so distinct are the ultimate sources from which they take their rise, that every circumstance forbids us to suppose them to be of the same character.

It is particularly important in the treatment of local sores to be able to distinguish those which will be injured by mercury; and these have, perhaps, been better understood and more accurately described by Mr. Carmichael than any other writer. It is probably from injudicious perseverance in the use of mercury in these cases, that those terrible instances of suffering from secondary symptoms take their rise, of which every work on venereal

diseases is full. In general, secondary symptoms require more caution in the use of mercury than the primary, although there are not fewer cases in which its administration becomes either necessary, or expedient. In this state of the disease, it probably does good more frequently, by its power in amending the state of the digestive organs, since it is not unlikely, that their derangement frequently renders the system liable to their occurrence.

The limits of this paper forbid my entering more largely into this part of the subject, which is extensive and interesting. Enough has been said to convey some tolerable idea of what has been done within the last few years, and of the vast field which yet remains for observation and experiment. The attention of practitioners in this country, seems not yet to have been sufficiently awakened to the important questions at issue. The opportunities here for investigation, are, it is true, extremely limited; but it is due to the character of our profession, that we should not, on this account, forbear to contribute something, however little, to the general stock of knowledge.

August, 1820.

REVIEW.

A View of the Progress and Present State of Animal Chemistry.
By IÖNS JACOB BERZELIUS, M.D. *Professor of Medicine and Pharmacy, &c.* Translated from the Swedish. By GUSTAVUS BRUNNMARK, D.D. &c. London, 1813. pp. 115.

EVERY one who is acquainted with the history of modern chemistry, must know that the author of this treatise holds a distinguished rank among its most zealous and successful cultivators. To great sagacity Berzelius has united unwearied industry, and there is no department of the science which has not been improved by his labours. The number of different analyses executed by him is prodigious; at the same time they are remarkable for their minuteness and precision, and have led him to the discovery of substances which were not before known to exist. Berzelius has done as much as any other chemist in developing and in establishing the theory of Definite Proportions, and the results of his multifarious investigations have been to accumulate interesting or important facts, or to settle the general deductions which constitute the science of chemistry.

Among his numerous publications the little work before us is not the least important. He seems to have been the first who has taken up the subject of animal chemistry in such a way as to show its connexion with physiology, to point out the limits of chemical action in the living animal body, and to prepare the road by which his successors in this interesting branch of the science may ultimately arrive at the knowledge of the precise influence of chemical and vital powers, in preserving organic and animated systems.

The occasion which gave rise to this work, was his retiring from the Presidency of the Royal Academy of Sciences, at Stockholm. This academy elects its president semi-annually from among its members, and he whose turn it is to resign, is required to read an essay, or deliver a speech, upon some literary or scientific subject. It appears, that some years ago Berzelius had published a work

on Animal Chemistry, in two volumes, but this work has not, we believe, been done into English, and we are unacquainted with its contents. It is probable, that the present essay contains the results of the researches detailed in the larger work, together with the corrections which may have been rendered necessary from the improvements made in this department by subsequent experimenters.

“The constituent parts of the animal body,” says Berzelius, “are altogether the same as those found in unorganized matter, and they return to their original inorganic state by degrees, partly during the progress of life, partly when the body, after death, undergoes its final change, and, independently of this, there exist processes between the inorganic constituents, or elementary particles within the animal body, which have sometimes not the least resemblance to those we see in unorganized matter. We may consider the whole animal body as an instrument, which from the nourishment it receives, collects materials for continual chemical processes, and of which the chief object is its own support.”

A very superficial knowledge of chemistry and physiology is sufficient to convince us, that, in the living body, the ordinary laws of the former either cease to operate, or if they do operate, their actions are modified or controuled by other powers, in consequence of which phænomena are produced, differing essentially from those which are the results of the influence of the same laws on inorganic matter. The living system presents us with combinations which we may in vain look for from without, and which we may endeavour in vain to imitate. Yet as they are formed of the same materials, that, when united in a different manner, may constitute some of the usual forms of common matter, it must be inferred, that other powers residing in the animal body exert some positive influence, in determining both the number of the elementary particles, and their modes of combination in a product of living matter. The powers in the animal body which thus exalt or diminish, modify or controul the common laws of chemistry, are those which in their aggregate constitute *life*. The chemical processes observed in living systems, are inferred by Berzelius to depend upon the brain and nerves, but at the same time he acknowledges, that the chemical operations going on in the body are beyond our reach, and that the philosopher must never hope to develop the cause or determine the mode by which they are effected. He brings forward an example “to show the embarrassment of the student of animal chemistry on all occasions, when the inconceivable nervous system exercises its operations.”

“It is well known, that blood, which is always formed from the food of the animal, is the raw material out of which the body recruits and reproduces its parts ; and this blood which is every where of the same nature is conveyed through the arteries to every part of the body. From this blood the kidneys form urine, the glands near the ear and under the tongue, the saliva ; those in the breasts of women milk, and so forth ; all which are humours of the most different natures. The most acute anatomical investigation has proved, beyond all doubt, that the vessels in these parts, while they extend themselves, proceed in an uninterrupted course, without communicating with any others—that no foreign humours which could affect the blood, have access to them ; and that consequently the blood is not exposed to the influence of any mixed chemical agency. But what is it that here effects the chemical process, which from the very same particles of blood, forms those of saliva, milk, and urine ? It cannot be form and flexure of the vessels since they can only cause a greater or less delay, and that this alone cannot determine the formation of the secreted matter, common chemistry will shew. Consequently, there remains only the influence of the nerves, which enter into these parts and which determine as well the nature of the secreted matter as its quantity.”

That nervous power has a considerable influence upon the secretory processes, that it is capable of increasing, or diminishing, or even suspending them for a time, we are not prepared to deny. But that it is this power which alone determines the nature as well as the quantity of the fluid, &c. secreted, admits of some doubt. It is, to be sure, a subject of speculation, from which nothing satisfactory can be derived, but which, being connected with the functions of our own bodies, must always be interesting. The old theory may be supported. We know that each secreting organ of the body has its peculiar structure, and forms its own peculiar fluid. Its functions are determinate, and it never performs a vicarious office in health. If the form, flexure, &c. of the vessels composing an organ have no effect upon its function, if the secretory process be performed by the agency of the nervous power, or, to speak more in the language of the author, if the nervous power determines the chemical operations going forward in the organ, why is it necessary that it should be of a particular structure, differing from all other glandular structures ? Or why, as all the organs of the living body are subjected to nervous influence, may not the mammary glands secrete saliva, and those of the mouth, produce milk ? If the vessels themselves exert no immediate influence upon the nature of the fluids secreted, there is no apparent reason why different organs should not secrete the same fluid, since the blood, the material from which the various parts of the body are formed, is exposed in all to the

influence of the nerves. We can, however, conceive, that the form of the vessels may of itself determine the nature of the secreted matter, by bringing elementary particles near enough to each other to cause the exertion of chemical affinities. It is well known, that, when the vessels are diminished to a certain diameter, they cease to convey red blood, the colouring matter, therefore, of this fluid, is not capable, in their healthy state, of passing through them ; supposing this diminution in diameter to proceed, other portions of the circulating fluid may be rejected, while the elementary particles of that which is admitted, may, by pressure, or other causes, be made to assume new arrangements, and produce fluids with different properties. In this point of view, the use of the nerves will be, not to determine the combinations of the elements of the body, but to keep up and regulate the actions of the vessels in which those combinations are to take place. This mode of explanation, it may be said, is mechanical, and gives too much to the vessels of a secreting organ. It may be so, but it must be remarked, that it has the advantage of assigning some immediate cause for, and its mode of operating in the production of many of the phænomena of the living body, while in the other hypothesis, we are brought to a stand at once, and obliged to acknowledge, that the influence of the nervous power is an ultimate fact, beyond which, we have not, and cannot penetrate ; a law of nature, which, while we observe, we cannot reason upon nor elucidate. It is always useful to trace causes as far back as possible, and although it be certain, that we shall ultimately arrive at a point, beyond which conjecture must supply the place of knowledge, yet there is, without doubt, a great interval between what have been called second causes, and the cause from which all power and motion is derived.

In concluding his observations on the influence of the nervous power, Berzelius has made some judicious observations upon the attempts of those chemists and physiologists who have endeavoured to identify this power with galvanism, or voltaic electricity. After alluding to the discoveries of Galvani, and the experiments of Thomas Bunzen, and Everard Home, he remarks, "that the effect of the pile, both on animal and unorganic liquids, has nothing at all analogous to the secretions ; and by applying this chemical agent to explain the subject, we gain not the least information." He says, and the remark will be acknowledged to be true by every physiologist, that it is fruitless to expect any information on this point by any chemical analysis of the matter of the brain or nerves, for "our experiments sufficiently convince us, that the operation of the nervous system is not performed by a mutual decomposition of the medulla and the part on which it

operates.”—And we then have the principle upon which the subsequent part of his work is grounded. “In this state of our information, I consider it as no small merit in a lover of the science, if he distinctly lays open what is really known, and determines with equal distinctness, what is yet unknown to us, without filling up the chasm with conjecture.” Before leaving this subject, viz. of the identity of the nervous influence or power, with voltaic electricity, we must cursorily advert to the experiments of Dr. Wilson Philip,* which have been executed since the publication of Berzelius’ work. We hope at a future time to make Dr. Philip’s “Inquiry” a subject of a distinct review, and shall therefore, at present, merely notice the conclusions to which he thinks he has arrived by the direct road of experiment.

Dr. P. infers, that in the more perfect animals, there are three vital powers, viz. the muscular, the nervous, and the sensorial, each having a separate existence independently of the others, but at the same time being so connected, that neither of them can long exist without the others. The nervous power, which operates in many other instances, may be the means of exciting the muscles, of conveying impressions to and from the sensorium, of effecting the formation of the secreted fluids, and of causing an evolution of caloric from the blood. This agent must be of the most subtle kind, and as voltaic electricity is both highly attenuated and capable of acting upon the muscular fibre, it was suggested that they might be analogous or identical. But this opinion, according to Dr. Philip, can be maintained upon no other ground than by showing that voltaic electricity is capable of the more characteristic as well as the more simple functions of the nervous power. This he has attempted to do, and he feels himself authorized to say, from the result of experiments, detailed in the “Inquiry,” 1. That voltaic electricity is capable of effecting the formation of secreted fluids, when applied to the blood in the same way in which the nervous influence is applied to it.—2. That it is capable of occasioning an evolution of caloric from the blood.

“Galvanism seems capable of performing all the functions of the nervous power in the animal œconomy; and if so, must be regarded as identical with this influence; but neither can excite the functions of animal life, except when acting on parts endowed with the living principle. Parts endowed with this principle, collect the nervous influence, and apply it where it is wanted, to act on parts also endowed with the living principle; but the nervous influence itself seems to be nothing more than the influence which operates in the production of all galvanic phænomena.”

* *Experimental Inquiry into the Laws of the Vital Functions, &c.*
Annals of Philosophy. Vol. II. p. 114.

We shall conclude the subject of the nerves and sensorium, by stating the experiments which have been on them by different chemists and physiologists. Berzelius notices the analyses of the brain, by Thouret, Fourcroy, and Jordan, and observes, that,

“Considering the time when they were published, they are of real merit ; they constitute all that animal chemistry can yet show relative to this noble organ ; but in the present state of the analytical part of the science, they need to be revised and corrected.” p. 13.

Since these observations were written, this labour has been undertaken by Vauquelin. The brain has been submitted to an elaborate analysis by this distinguished chemist, but from its results the physiologist has derived only the solitary and mortifying fact, that his science has not been advanced a single step by the knowledge of the chemical composition of the encephalon. We subjoin these results for the satisfaction of those of our readers, who may not have met with the memoir of Vauquelin.*

1.	Water,	-	-	-	-	-	-	80·00
2.	White fatty matter,	-	-	-	-	-	-	4·53
3.	Reddish, do. do.	-	-	-	-	-	-	6·70
4.	Albumen,	-	-	-	-	-	-	7·00
5.	Osmazome,	-	-	-	-	-	-	1·12
6.	Phosphorus,	-	-	-	-	-	-	1·50
7.	Acids, salts, and sulphur,	-	-	-	-	-	-	5·15
								<hr/> 100·00 <hr/>

Berzelius has given the celebrated Bichat credit for his experiments upon the membrane of the nerves (*neurilema*,) “The discovery of the possibility of dissolving, by means of caustic alkali, the medullary part of the nerve, so that its membrane should remain as a hollow tube, has afforded a good opportunity for separating the membrane, and has given us some information concerning the channel which the neurilema forms.”

The subject next taken up by Berzelius is the chemical constitution of the blood, and much credit is due to him for the very able analysis of this important and very compounded fluid. After adverting to the experiments and opinions of his predecessors, he proceeds to detail the discoveries which have resulted from his own investigations. The author denies, that gelatine exists as a constituent part of the blood, and affirms, that what had been taken for that principle, is nothing more than albumen in a

* Annals of Philosophy—translated. Vol. I. 32.

half coagulated state. Sulphur, which was supposed to be a component part of the blood, he has found to belong, as a constituent ingredient, to albumen. From the time that the celebrated experiments of Fourcroy and Vauquelin were published, in which serum acquired a red colour by being triturated with sub-phosphate of iron, and had its colour heightened by the addition of an alkali, it was believed by chemists, that the colouring matter of the blood consisted of that salt; an opinion which was supported by the fact, that iron was found in the ashes of this fluid. "According to these experiments, the colouring of chyle in the air, consisted in the change of the phosphate of iron, from a neutral phosphate of the protoxide, to a sub-phosphate of the peroxide." These experiments were repeated by Berzelius, but his results invariably disagreed with those of the French chemists, and he was compelled to admit, that, in regard to the manner in which iron is united to the colouring matter of the blood, we know as little now, as when iron was first discovered in it. The experiments of Mr. Brande, which were repeated and confirmed by those of Berzelius and Vauquelin, have led to some extraordinary facts relative to the nature of the colouring matter; and the fact may now be considered as established, that this matter, instead of being metallic, is of an animal nature. Each of these chemists has given a process for procuring it free from the other constituents of the blood, so that has been examined in its insulated state, and Berzelius affirms, that, though it be not identical with albumen, it bears a very intimate resemblance in properties, to that principle. He has proved, that metallic oxides, particularly those of iron, may be dissolved to a certain degree in serum, and thereby, more or less change its colour, but, that none of them impart to it the colour of blood, and, that the serum thus impregnated with iron, is entirely destitute of the intrinsic characters of the colouring matter. He was unable to detect the presence of iron, in a saline form, in the colouring matter, or to extract iron from the blood, although it is found in its ashes. The same observation applies to *bone-earth*, or sub-phosphate of lime; whence he concludes, that the blood contains the elements of these compounds, united in a different manner from their combination in the salts. In a subsequent memoir, inserted in the third volume of the *Medico-Chirurgical Transactions*, Berzelius has stated, that the ashes of the colouring matter consist of oxide of iron and its sub-phosphate, phosphate of lime with a little magnesia, pure lime, and carbonic acid. The manner in which the elements of these compounds exist in the coal and in the ashes, he supposes to be very different. The coal, he infers, is not a simple mechanical mixture of

charcoal with the phosphates and carbonates of the earths and of iron; but a chemical compound of their bases, viz. of carbon, phosphorus, and sulphur, with calcium, ammonium, and iron; and, that it is in a mode analogous to this combination, that the iron, calcium, phosphorus, &c. are united with the charcoal, and other constituents of the colouring matter.

Berzelius has stated some new facts relating to the fibrin of the colouring matter, and likewise discovered in the blood an alkaline lactate of potash, and some peculiar animal matters, which always accompany the lactate, and which, in his opinion, owe their existence in the blood to the absorption of those decayed parts of the body which are destined to be separated by means of secretion. The result of the examination of fibrin, albumen, and colouring matter of the blood, is the fact that they very nearly coincide in chemical properties, and consequently, that their composition is very similar.

The author then passes to the chemical properties of the blood-vessels; he adverts to the opinion of Haller, who supposed that one of the coats of the arteries was muscular, and thence deduced his theory of the *pulse*. This subject has been a very interesting one to physiologists, and caused a great deal of discussion. John Hunter denied the existence of muscular action in the arteries, and his opinion was strengthened by the experiments of Bichat. The researches of Berzelius have shown, that the fibres of muscles have few or no properties in common with the fibres of the arteries; hence the conclusion is drawn, that as an artery has not the structure of a muscle, nor exhibits the same effects with chemical reagents, it cannot be a muscle nor perform the function of a muscle, a fact, which is besides, sufficiently evident from its elasticity. The pulsation of an artery, therefore, is derived from the heart, and is synchronous with it. The subject has been more lately investigated by Dr. Parry, and other physiologists, but we have no room to dilate upon their observations.

The determination of the question, relating to the cause of the pulsation of the arteries, has depended in a considerable degree upon the chemical properties of the arteries themselves, and in this instance, at least, it will be perceived, that, if chemistry be not able to explain the results of the functions of living matter, it may furnish facts to decide on the comparative merits of physiological hypotheses. It is probable, as suggested by Berzelius, that the vessels which constitute the capillary system, have the power to transmit fluids independently of the *vis a tergo*, or action of the heart.

With regard to respiration and the reciprocal influence of atmospheric air and the circulating blood, Berzelius has nothing new to offer or propose. After detailing the experiments of the earlier chemists and physiologists, to arrive at some conclusions on this subject, he adverts to those of Allen and Pepys which were the last and the most perfect. Some of their results, when some of the lower order of animals were the subjects of the experiments, were curious and unexpected, particularly the exhalation of nitrogen from the blood. The theory of respiration as it now stands, infers only the de-carbonization of the blood, the disappearance of a certain proportion of atmospheric oxygen, and the production of an equal bulk of carbonic acid. The carbon thus extricated is doubtless derived from the colouring matter, as during this process it changes from dark purple to bright crimson.

The cause of animal heat, which is now acknowledged to be involved in mystery, was supposed at the time Berzelius wrote, to have been determined by the profound and beautiful researches of Crawford. It is well known to all chemical readers, that he founded the solution of this phenomenon on the difference of capacity for heat between venous and arterial blood. By satisfactory experiment, it was proved, that the capacity of the latter was greater than that of the former, and consequently, that the heat given out by the combination of the carbon with atmospheric oxygen was absorbed by the blood, during its passage through the pulmonary system, and was evolved as the blood again became venous. This theory, then, was built upon the relative capacities of oxygen and carbonic acid gases on the one hand, and those of arterial and venous blood on the other. Berzelius seems to adopt this explanation, but he has not failed to notice with his usual sagacity, the extraordinary conclusion to which it leads, that an adult must discharge from his lungs every twenty-four hours, a quantity of carbon, equal in weight to three quarters of a pound, "which, besides what is separated in other places, presupposes at least from eight to ten pounds weight of food within the day, which is more by far than any person generally consumes."

The late researches of Dr. John Davy, of Berzelius himself, of Berard and Delaroche, and of Dulong and Petit, have completely overturned this ingenious theory. It has been found, either, that there is no difference in the capacity for heat between arterial and venous blood, or if there be, it is in favour of the latter; and that the capacities of oxygen, and carbonic acid gases so nearly approximate, that the quantity of heat given out

during the conversion of the former into the latter, is so small, as by no means to account for the quantity evolved in the animal system.

In concluding the subject of the blood, we may mention, that a very valuable memoir on *Sanguification*, by Dr. Prout, has very lately been published in the thirteenth and fourteenth volumes of the *Annals of Philosophy*. Dr. Prout believes, that the blood begins to be formed, or developed from the food, in all its parts, from the first moment of its entrance into the duodenum, or even, perhaps, from the first moment of digestion, and that it gradually becomes more and more perfect, as it passes through the different stages to which it is subjected, till its formation be completed in the sanguiferous tubes, when it represents an aqueous solution of the principal textures and other parts of the animal body to which it belongs. The principal distinct stages in the formation of the blood, in all the more perfect animals are digestion, chymification, chylication, and sanguification, usually so called; the first process being confined to the stomach, the second to the duodenum, the third to the lacteals, and the fourth to the blood vessels. The properties of chyme, chyle, and blood, the results of the processes, appear to run gradually and imperceptibly into each other, and hence perhaps they can hardly be considered as distinct and well defined steps in the general process of sanguification. Dr. Prout, however, has found it convenient to examine them separately, and in doing this he has availed himself both of the labours of others and of the results of his own experiments. We have from him a full account of the properties of chyme and chyle, of the process of respiration of different animals, &c. The account is too long to allow even of an abridgment, but we recommend it to the perusal of all those who wish to have the most recent opinions upon these subjects.

After having noticed the results of respiration in man, Berzelius adverts to this process in other animals. Birds are more delicate as to purity of air than some other animals, for they die in an atmosphere which may be supported by mice without inconvenience. Fishes breathe by the gills, and as water contains condensed only about $\frac{1}{100}$ of its volume of oxygen, they require but a small quantity for the support of life, though they die in water deprived of its air. The elastic fluid in the air-bladders of this class of animals has no connexion with the gills, and does not contribute to their respiration. In fresh water fish, Erman fancied that the air included in these bladders was nitrogen with a diminished proportion of oxygen; on the other hand, Biot found that, in salt water fish, it contained an excess of oxygen, proportional

to the depth at which the fish was in the habit of living, so that fishes caught in water 1000 metres deep, the air contained from $\frac{2}{5}$ to $\frac{9}{10}$ of oxygen. In the bladders of such fishes, the air is so compressed by the heavy column of water above, that when the animal is drawn to the surface, the bladder swells and forces the stomach through the mouth. According to Erman, the *cobitis fossilis*, when in water containing air, breathes as usual by the gills, but in water freed from air, it rises to the surface, draws it into the mouth and swallows a portion, which in passing through the intestines loses its oxygen, and at the same time reddens the blood. The residual air is discharged by the rectum. Berzelius quotes the observations of Haussman, and of Spallanzani, which prove that insects and worms consume oxygen and produce carbonic acid. Dr. Prout, in his paper, has collected other and later authorities which support the same conclusion, and it may be considered as a general truth, that all classes of animals hitherto observed produce the same changes in air by respiration as man.

Lymph or the fluid found in the absorbent vessels, has been examined by Emmert and Reuss. It resembles serum, but after a time coagulates like the fibrin of the blood.

Subsequently experiments have been made on Lymph by Mr. Brande.

In examining the humours of the body, Berzelius has found that they all have their own characteristic constituents. Thus there is a matter peculiar to the saliva, another to the liquid of tears, a third to the bile, &c. The humours, in which these characteristic constituents are found to be dissolved, contain the salts of the blood, and often its alkali, in the same proportion as in the blood. The following generalization upon this subject will be found both useful and interesting.

“The secretions, or such humours, as before their discharge are intended to be used for some purpose within the body, are alkaline; the excretions, on the other hand, or such as are to be thrown off immediately, are all acid, for instance, *sweat, urine, milk*, and the free acid which they contain is lactic.” p. 48.

Having devoted so much space to the consideration of the brain and nerves, and the blood, we must now pass over the remainder of this work more rapidly, though not without adverting to the experiments of those who have succeeded its author in animal chemistry.

The composition of the *cellular texture*, according to Berzelius, has been but imperfectly investigated. He denies that gluc or gelatine exists in any part of the animal body—the precipitate

with tannin, which is characteristic of the presence of this principle, cannot be obtained from any of the animal humours, with the exception of the urine, and not even from that liquid until it has been boiled for some time with an alkali. Hence the glue obtained from skin, &c. he affirms is a product of the boiling.

The fatty or oily matter contained in the cellular texture is analogous in its chemical properties to the fat oils of vegetables.

The difference between *pus* and *mucus*, at least so far as their chemical properties are concerned, the author thinks has not been satisfactorily ascertained, and he places no great dependance upon the experiments of Dr. Pearson.

Berzelius likewise denies that there exists an animal mucus distinct from the mucus of the membranes, and supposes, that the term has been employed by chemists as a common name for matters, which could not be distinctly specified.

The mucous membrane has been examined by Bichat.

The liquid produced from the *serous* membrane, particularly in dropsies, has been proved by Berzelius to be the serum of the blood, deprived of the greatest part of its albumen. It contains several salts.

The saliva consists of a very large proportion of water, of the salts of the serum, and of a peculiar matter, incapable of being coagulated by boiling, by tannin, or by sub-acetate of lead. With water it forms a frothy solution.

“When part of the mucus of the saliva remains on the teeth, it thickens, becomes coloured, and forms what is called *tartar*; and I have found this to be of a twofold kind. When just settled, it is clearly nothing else but the hardened mucus; but during the destruction of the mucus, we gradually perceive phosphate of lime on the enamel of the tooth, which sometimes is increased to a crust of the thickness of $\frac{1}{4}$ or $\frac{1}{2}$ a line. This contains, besides the phosphate, about $\frac{1}{5}$ its weight of mucus, which has been dried up in the earthy mass.” p. 62.

Nothing has been added by Berzelius to our stock of knowledge respecting the nature of the *gastric juice*. Dr. Prout has subsequently found, that there is a volatile acid, which he is inclined to believe is the carbonic acid, from the effects produced on litmus paper. Phosphoric acid, as observed by Vauquelin, likewise exists in the liquids of the stomach. An interesting account of the appearances in the stomachs of rabbits, after eating, has been given by Dr. W. Philip.

The *bile* has been the subject of diversified experiments by chemists, and there has been some discordance of opinion among them concerning its proximate elements. It has been considered, as a saponaceous compound of green resin and soda. The-
nard discovered in it a peculiar bitter-sweet substance, to which, from its taste, he gave the name of picromel, and which, together with the alkali, contributed to hold the resin dissolved. The same chemist found in the bile a quantity of albumen, a peculiar yellow matter, and several salts. Berzelius, on the contrary, affirms, from the results of his experiments, that the bile contains no resin, but a peculiar matter, of a taste both bitter and sweet, possessing characters partaking of those of the fibrin, albumen, and colouring matter of the blood, and capable of forming, with an excess of mineral acid, a compound which has all the properties of a resin. With a smaller quantity of resin it forms a compound soluble in water. The albumen said to exist in the bile, the author has proved to be merely the mucus of the gall-bladder. The change which the bile undergoes, after it is mixed with the chyme in the duodenum, is unknown. It was thought, says Berzelius, that no chyle could be formed without the assistance of the bile, but though it cannot be denied, that the bile may be indispensable to the formation of perfect chyle, yet we have instances of persons in whom, during a chronic jaundice, the flow of bile has been obstructed for two or three weeks together, and yet they have not died for want of nutriment.

After stating what was then known of the physical and chemical properties of the chyme and chyle, the author gives the following very general view of the process of digestion.

“The alimentary matters are accurately triturated in the mouth, received into the stomach, and there converted by the gastric juice into a uniform fluid ; which is precipitated in the duodenum by the bile. The solution is filtered in the intestines by means of the absorbents, and the precipitated matter is washed by the intestinal fluid, which is again absorbed, in the same manner as precipitates are edulcorated in our common filtering apparatuses, after which the washed matter is evacuated.” p. 75.

The remaining pages of this work are occupied in describing the properties and composition of bone, marrow, synovia, muscle, sinews, membranes, humours of the eye, tears, skin, nails, hair, urine, liquor amnii, and milk.

In stating the nature of bone, the author of course speaks of the cartilage and of the means of removing it. Papin's digester is introduced, its æconomical uses are briefly described, and the

subject has given an opportunity to relate the following anecdote. Papin had shown to Charles II. of England, that it was possible to extract a jelly from bones, and had engaged within twenty-four hours, with eleven pounds of charcoal to prepare one hundred and fifty pounds of a jelly, which he recommended to be used in work-houses and hospitals. The King was ready to give this project the attention it deserved, when, as he was one day going to dinner, he found petitions fastened to the necks of his dogs, the import of which was, that he should not deprive them of a food, which they had long considered as their property. The jest was smiled at, and Papin's discovery was lost for the age. The use of this machine, however, has been adopted in Spain, it was employed in France, and according to Berzelius, it afterwards spread throughout Europe. Every one who is acquainted with chemistry knows that the principle on which Papin's digester is constructed, is to confine the steam of water until it is heated many degrees above its ordinary temperature, or 212° Fahr. It then becomes a powerful instrument for the solution of animal substances which are with difficulty soluble by ordinary means, but which, when once reduced to jelly, afford a very nutritive diet.

Of late, cartilage is obtained for soup, &c. by immersing bone in diluted muriatic acid, the phosphate of lime and other earthy compounds are dissolved, while the cartilage remains entire.

Berzelius has a good deal to say of the urine, of urinary calculi, &c. He has analyzed that excrementitious fluid with great exactness, and found in some of them substances which had escaped the notice of his predecessors. Our knowledge of its composition and of that of some of its constituents has likewise been extended by the later experiments of Wollaston, Brande, Berard and Prout. A valuable account of urinary calculi has been published by Dr. Marcet.

We shall here terminate the account of this treatise by remarking, that the different subjects contained in it, are noticed in a very clear and methodical manner, and that it is well calculated for those who possess a moderate knowledge of chemistry, and wish a general acquaintance with the properties and composition of the component parts of the body. The physiological remarks every where interspersed, will render it peculiarly acceptable to the physician, and with little trouble it will be in his power to ascertain how much is known of animal chemistry; for though some new substances have been discovered, and others which were already known, have been more accurately described, or examined since this work was written, yet they do not bear any great proportion to the

whole, nor render it much less valuable or useful. If we are ever to arrive at the knowledge of the precise influence of chemical laws in the living body, it must be done by finding the composition of its component parts, and of the materials from which it is formed, and by studying or faithfully describing the phænomena of living matter. Animal Chemistry is of recent date, all generalizations at present will be premature, and like the theories of the production of animal temperature, will be doomed to fall in proportion as facts are accumulated, and the laws of vitality are brought into view.

SELECTIONS.

Case of Cholera, extracted from a Letter from JOHN WHITING, M.D.

HAVING been called, during the very hot weather of last harvest, to visit a man in the middle age of life, about eight o'clock in the morning, I found him in a most deplorable situation. On first sight he appeared to me to be labouring under tetanus in its most severe form and advanced stage; for his whole body was in a spasmodic state, and the energy of the system was quite exhausted. He complained, in a feeble tone of voice, that his head seemed to be girt round with a tight cord. His eyes were generally fixed and staring, the arms frequently stretched out, and the fingers, every now and then, had the appearance which I have more than once observed in children labouring under hydrocephalus, bent forward at an obtuse angle at the upper joint, but slightly curved backward from that point to their extremities. The cramp in his thighs and legs exceedingly tormented him. The diaphragm and muscles of respiration were so much affected that his breathing was rendered very laborious, and every now and then, as in tetanus, it was entirely arrested, violent pain being felt striking through the chest to the back at the same moment; and the patient's whole body was brought into the state of opisthotonos. The pulse, beating at the rate of about 100 in a minute, was extremely feeble, irregular, and intermitting every five or six strokes. All the secretions seemed stopped, the eye dull and dry, the tongue, although clean, yet free from a particle of saliva; the skin cold; his extremities felt as if they were those of a corpse. In short, such was his state, that when I first saw him I considered him a dying man, and thought that he could not live more than half an hour. Of course, I lost no time in learning the history of this poor man's disease, expecting fully to have my first view of the case corroborated by the relation of its cause and progress; but instead of this, was agreeably surprised at finding that all these tetanic symptoms were only an aggravated form of those spasms which generally more or less accompany cholera morbus; for I learnt that the man, after returning from the harvest field the previous night, had eaten a hearty supper, went to bed well, and almost immediately fell into a sound sleep, from which he did not awake until about 4 o'clock in the morning, when he was seized with a violent pain in his bowels; the abdomen was much swollen, and he felt an urgent desire of going to stool. He discharged a large quantity of liquid feces;—soon afterwards he became sick. The purging and vomiting had re-

curred every ten minutes or quarter of an hour, till the time I saw him ; and he had gradually sunk into the miserable state which I have described. This history at once suggested to me the *methodus medendi*, one which has never failed me in the treatment of this formidable disease. My aim is, to render the bile in the stomach and bowels less offensive, by diluting it largely by some watery fluid, as thin gruel, barley water, or simply warm water. As some gruel was at hand, I made him drink about a pint of it ; and with a view of lessening the formidable exhaustion of spasm, I added about half a wine glass of gin, and 30 drops of laudanum. After a few minutes he felt a little better ; still, however, the sickness and spasms continued. I therefore, in about eight or ten minutes gave him another pint of gruel, and 30 more drops of laudanum. In a little time the spasms began to give way, his countenance improved, and his pulse rose and became regular, and he said he thought he should fall asleep had he not still cramp in his thighs. I waited about half an hour, hoping he would sleep ; but finding him still restless, I gave him half a pint more of gruel. Soon after this he was so much better that I left the house, having directed his wife to give him half a pint of gruel every quarter of an hour. I had gone but a few steps when I was called back ; and on going into the room I found that he had vomited nearly a wash-hand bason full of an olive green fluid. From that moment every symptom of the disease gave way. His countenance became natural, his skin warm, his pulse steady and full, and he said that a delightful glow pervaded his whole body, particularly his legs and thighs. After this he fell into a sound sleep ; the vomiting never returned, the bowels became regular, the stools being rather more bilious than common ; and in three or four days the man returned to his employment in the harvest field.

Edinburgh Med. and Surg. Journal,

Swaffham, November 19, 1818.

ON the 17th of January a paper of Dr. Fergusson's was read before the Royal Society of Edinburgh, on the nature and properties of the marsh poison, as known under the titles of Marsh Miasmata and Malaria, wherein the author endeavoured to prove, from reference to the medical topography of different places in the south of Europe and the West Indies, that the universally received theories of aqueous and vegetable putrefaction, singly or combined, being the sources of this poison, was unfounded ; that putrefaction under any shape had no effect in producing it ; that it never emanated from water in bulk, however putrid ; but is the product of a highly advanced stage of the drying process in absorbent soils that had previously and recently been saturated

with water. The illustrations were principally taken from the countries where the author had served during the last twenty-five years, and exhibited a great variety of facts and observations in support of the opinions advanced. Other properties of the marsh poison, such as its adherence to, and attraction for, lofty umbrageous trees and rising grounds in the neighbourhood of swamps; its concentration in ravines and hollows; its absorption by passing over water; its rarefaction or dissolution by the sun's heat, and by regular currents of wind, were also pointed out and illustrated. In the course of his paper, the author, while treating of the effects of the marsh poison, was led to consider the yellow fever of the tropics, which he views as the extreme and most baleful product of the marsh poison; and he brought many facts and arguments, which he conceived incontestably established the non-contagious nature of that dreadful malady. He concluded with some remarks on the mode of reception of the marsh poison into the human constitution, whether by the stomach, lungs, or skin; which last he seemed to regard as the most probable channel; an opinion which he supported by some curious illustrations taken from the History of the Plague of the Levant, and from a consideration of the peculiar dermoid idiosyncrasies of the African or Creole negro.

We wish much to see a full developement of the views contained in this paper, many of which are both novel and important. When we recollect that it proceeded from the same pen as the essay on the Syphilis of Portugal, which first tended to direct the attention of professional men to an inquiry from which the most important results may be looked for, we confidently hope that the same spirit of investigation may be awakened to the no less interesting subject of marsh effluvia. *Ibid.*

INTELLIGENCE.

MEDICAL LECTURES.

The Lectures of the Medical Institution of Harvard University, will begin at the Medical College in Boston, on the third Wednesday of November, and continue daily for three months.

Anatomy and Surgery, by Dr. WARREN.

Chemistry, by Dr. GORHAM.

Midwifery and Medical Jurisprudence, by Dr. CHANNING.

Materia Medica, by Dr. BIGELOW.

Theory and Practice of Medicine, by Dr. JACKSON.

Dr. BIGELOW, Dean of the Faculty.

MEDICAL INSTITUTION
OF
HARVARD UNIVERSITY.

IN THE COURSE OF THE PRESENT YEAR THE FOLLOWING GENTLEMEN HAVE RECEIVED THE DEGREE OF DOCTOR OF MEDICINE.

George Baker, A.M. Dedham.—*Rheumatism.*

Robert H. Cary, A.B. Chelsea.—*Epilepsy.*

Aaron Cornish, New-Bedford.—*Arbutus Uvæ Ursi.*

George Bartlett Doane, A.M. Boston.—*Diseases of the Mediterranean, as they occurred on board the United States Ship Independence.*

William Goddard, A.M. Portsmouth.—*On the Digestive Organs.*

Thaddeus William Harris, A.B. Dorchester.—*Atrophia Ab-lactatorum.*

James McKeen, A.B. Brunswick.—*Euphorbia.*

William Little Loring, Duxbury.—*On Blood-letting in Hæmoptysis.*

George Russell, Lincoln, Mass.—*Puerperal Fever.*

John Phillips Spooner, A.M. Boston.—*Vascular System.*

John Doane Wells, A.M. Boston.—*Cancer.*

Augustus Whiting, A.M. Charlestown.—*Cynanche Trachealis.*

For Portsmouth, New-Hampshire, for A. D. 1818....By JOHN THURSTON, M.D.

Complaint.	Age.	Males	Females	January	February	March	April	May	June	July	August	September	October	November	December	Total.
Abscess - - - -	86 yrs	1												1		1
Apoplexy - - - -	75 65 79 yrs	2	1			1	1	1								3
Atrophy { 2 2 2 ds 65 91 yrs		5	2	1	1					4				1		7
	5 3 wks.															
Cholera - - - -	2 3 wks 10 yrs	2	1							1		2				3
Cancer - - - -	42 yrs		1												1	1
Consumption. { 64 40 38 23 49 13		8	14	4	1	2	3	1	1	1	2	2	1	2	2	22
	65 54 50 35 36 30															
	50 67 29 21 5 38															
	22 29 52 44															
	yrs															
Croup - - - -	1 50 yrs	1	1				1							1		2
Dropsy - - - -	59 30 66 yrs	2	1					1		2						3
Dropsy of the brain { 3 1 12 2 18 ms		2	3		1			2	1	1						5
Diarrhoea - - - -	74 yrs	1											1			1
Erythema - - - -	3 mo	1									1					1
Fever typhus { 12 46 39 1 20 16		7	14	1	1	1	2			1	2	2	4	2	5	21
	31 28 43 23 63 21															
	22 36 5 29 20 40															
	17 30 87															
	yrs															
Fever pulmonic { 6 3 mo		2	2	1				2				1				4
	1 6 wks															
Fever puerperal - -	42 yrs		1			1										1
Fever inflammatory	23 yrs	1				1										1
Gangrene - - - -	6 yrs		1							1						1
Hæmorrhage - - - -	19 yrs	1										1				1
Herpes - - - -	5 mo	1											1			1
Hysteritis - - - -	45 yrs		1			1										1
Intemperance - - -	45 yrs	1										1				1
Inflammation of the bowels { 7 mo			1					1								1
Inflammation of the liver { 17 yrs			1													1
Pneumonia { 70 3 67 42 yrs		2	2					1	1					2		4
typhoides {																
Scrofula - - - -	9 27 48 yrs	2	1							1		2				3
Schirrus liver - - -	60 32 yrs		2							1					1	2
Sudden - - - -	30 4 yrs 3 mo	1	2					1	1					1		3
Old age { 30 78 87 83		6	5		2	1	3					1	2	2		11
	87 77 80 86															
	86 85 92															
	yrs															
Unknown { 2 8 mo 8 ys 3 ws		4	2	2	2					1	1					6
diseases { 3 mo 20 yrs																
Casualties { Burnt - - - 9 8 mo		1	1	1	1											2
	Drowned 40 32	2	2	1				1		1		1				4
	12 35															
	yrs															
Birchs. { Males 124,		56	62	11	9	8	11	11	3	14	7	12	11	12	9	118
	Females 113,															
	Still Born 7,															
	Tot. 244															

Portsmouth, the capital of New-Hampshire, is situated in 43° 5' north latitude, and 6° 26' east longitude from Washington, and contained 6934 inhabitants in 1810.

For Portsmouth, New-Hampshire, for A. D. 1819....By JOHN THURSTON, M.D.

Complaint.	Age.	Males.	Females.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Apoplexy	69 76 72 70 67 yrs	2	3	2		2			1							5
Atrophy	2 6 mo 9 2 3 9 yrs	4	2	1	1				1	2		1				6
Burn	- - - - 4 yrs	1	1													1
Cancer	- - - - 69 yrs	1										1				1
Cholera	{ 7 2 3 wks 3 16 mo 65 37 yrs	4	3		1	1		1	1		1	1	1			7
Congenital deformity	8 dys	1									1					1
Consumption.	{ 84 78 56 37 54 52 27 48 24 24 43 44 41 25 29 17 25 67 30 72 28 55 54 34 38 52 46 24 } yrs	10	18	2	3	1	5	3	5	1	2	3	3			28
Convulsions	2 ds 19 5mo 2 yrs	2	2		1						1	1			1	4
Croup	- - - - 1 3 yrs	1	1	1	1											2
Dropsy	- - - 80 57 85 yrs		3							1				1	1	3
Dropsy of the brain	2 2 yrs	1	1			1						1				2
Dysentery	60 45 5 11 5 yrs	1	4									2	2	1		5
Erysipelas	- - - 31 yrs	1	1													1
Fever	{ 13 16 1 7 26 40 } yrs	5	3	1	3		1	3								8
typh.	{ 2 76 } yrs															
Fever pulmonic	5 2 3 yrs	3								1		1	1			3
Fever bilious	- 40 37 yrs	1	1						1			1				2
Fever malignant*	- 44 yrs	1									1					1
Hæmorrhage	- - 25 yrs		1							1						1
Intemperance	- - 46 yrs		1							1						1
Heart mal-formation of the	{ 6 ds	1		1												1
Marasmus	5 mo 71 45 yrs	2	1										2	1		3
Mania temulenta	- 46 yrs		1				1									1
Mortification	- 74 20 yrs	1	1					1			1					2
Peripneumonia	- 81 yrs	1							1							1
Old age	{ 68 80 82 80 79 80 80 86 84 79 82 73 85 } yrs	5	8	2	1	2		1	1	1		2		2	1	13
Schirrus liver	- - 60 yrs	1										1				1
Small pox	- - 22 yrs	1			1											1
Venereal disease	- 36 yrs														1	1
Fracture, compound	72 yrs		1										1			1
Sudden	- - - 75 yrs	1													1	1
Drowned	- - - 5 yrs	1							1							1
Total		49	60	12	12	7	7	9	12	8	7	15	10	5	5	109

* This case of Malignant Fever was traced directly to the ship Ten Brothers, which arrived in Boston from the coast of Africa, and communicated a pestilence to most of those connected with her.

Births....Males 108 ; Females, 125; Still born, 6—Total, 239.

Abstract of the Bill of Mortality for the Town of Boston, from the 31st of December, 1816, to the 1st of January, 1818;—agreeably to the Record kept at the Health Office.

1817.	Under 1 year.		1 to 2		2 to 5		5 to 10		10 to 20		20 to 30		30 to 40		40 to 50		50 to 60		60 to 70		70 to 80		80 to 90		90 to 100		100 to 110		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	3	7	4	5	5	2	3	0	0	4	8	1	3	5	6	1	4	1	2	1	0	0	1	0	0	0	0	0	71
February	10	3	6	2	4	4	2	0	2	4	4	1	3	4	2	4	4	2	2	0	3	0	1	0	0	0	0	0	67
March	4	3	2	1	4	2	2	0	0	1	5	7	6	6	4	7	3	3	2	2	2	1	0	0	0	0	0	0	71
April	5	6	2	4	3	5	1	3	0	1	1	2	5	6	7	2	2	3	2	3	1	1	0	0	2	0	0	0	67
May	3	2	2	2	3	0	3	1	0	5	3	6	7	4	4	3	1	0	1	1	4	0	1	4	0	0	0	0	62
June	4	4	3	3	4	2	1	0	1	2	4	2	4	4	1	7	3	0	3	5	1	1	1	0	0	0	0	0	60
July	7	7	4	2	3	0	1	1	2	3	3	2	6	5	6	4	2	0	2	2	0	0	0	0	0	0	0	0	64
August	13	19	17	12	3	1	3	1	4	1	3	3	3	4	16	12	13	12	3	2	2	1	2	1	0	0	0	0	151
Septem'r	13	13	13	9	3	4	2	0	1	1	3	2	1	2	5	4	4	1	2	1	4	7	3	0	0	0	0	0	98
October	8	10	10	16	4	5	3	1	1	4	1	5	2	3	4	6	1	2	3	4	3	4	2	1	0	0	0	0	99
Novem'r	3	3	8	5	2	0	1	1	0	1	5	1	5	3	1	2	0	0	2	0	2	0	2	2	0	1	0	0	50
Decem'r	3	3	1	4	1	0	1	1	1	2	4	2	4	1	3	5	1	1	0	2	2	2	1	1	0	0	0	1	47
Total.	76	80	72	63	30	25	23	10	15	29	44	31	46	53	58	62	35	28	24	24	27	16	13	10	0	3	0	1	907

The Deaths above were caused by Diseases and Casualties as follows, viz.

Abscess, -	3	Convulsion, -	1	Fits, -	-	35	Fever Puerperal, 3	Quinsy, -	6	Intoxication, -	3	
Angina Pectoris, -	2	Cynanche Trachealis, 1	1	Hanged, -	-	1	" Typhus, -	157	Phrenitis, -	6	Rickets, -	1
Apoplexy, -	17	Croup, -	3	Hæmorrhage, -	3	-	" Rheumatic, 7	Stone or Gravel, 3	Tetanus, -	1	Diseases unkn.	32
Cancer, -	11	Croup, -	11	Hooping Cough, -	19	-	Jaundice, -	3	Scalds and Burns, 9	-	-	-
Casualty, -	7	Dropsy, -	36	Fever Inflammatory, 2	2	-	Infantile Diseases, 157	Spasms, -	3	-	-	-
Cholera Morbus, 6	6	Dyspepsy, -	12	" Bileous, -	12	-	Mortification, -	9	Still-born, -	33	-	-
" Infantum, 2	2	Drowned, -	13	" Pleurisy, -	4	-	Old Age, -	50	Suddenly, -	13	-	-
Consumption, -	231	Dysentery, -	23	" Pulmonic, -	47	-	Palsy, -	6	Suicide, -	3	-	-

N. B. In the year preceding there were 904 deaths, including the deaths in the Alms-House and in the Hospital at Rainsford's Island. During the year ending 31st December, 1817, there were 5 deaths on Rainsford's Island, and 173 deaths in the Alms-House.

Published by order of the Board of Health,

JAMES ROBINSON, Secretary.

Boston, February 2, 1818.

Abstract of the Bill of Mortality for the Town of Boston, from the 31st of December, 1818, to January 1, 1820;—agreeably to the Record kept at the Health Office.

1819.	Under 1 year.		1 to 2		2 to 5		5 to 10		10 to 20		20 to 30		30 to 40		40 to 50		50 to 60		60 to 70		70 to 80		80 to 90		total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	8	4	1	1	0	1	2	3	4	4	4	5	4	4	4	1	2	3	3	2	0	3	0	1	57
February	8	6	1	3	0	2	0	1	2	4	4	2	3	3	3	0	2	3	3	1	0	2	0	3	52
March	5	8	2	2	2	0	1	0	1	6	4	5	0	4	3	2	2	2	1	3	1	1	0	0	55
April	6	1	4	1	1	2	1	4	8	2	6	7	1	2	1	1	1	1	0	1	1	0	1	1	50
May	5	3	3	2	2	0	2	3	6	6	4	2	3	4	2	2	2	1	2	0	1	1	0	0	56
June	6	0	2	0	1	0	0	6	1	1	4	3	2	4	4	2	2	0	0	3	1	0	0	0	33
July	4	4	2	1	1	1	6	2	4	0	4	5	2	0	6	3	1	1	2	2	0	1	0	0	52
August	7	6	6	7	2	0	1	2	2	4	6	13	7	5	4	4	4	4	0	6	2	3	0	0	94
September	13	7	17	9	3	3	1	0	1	6	8	7	7	4	4	4	2	1	2	5	4	3	0	2	113
October	9	6	3	4	4	2	1	4	3	5	1	3	4	3	3	5	2	7	0	0	2	1	2	3	83
November	3	4	2	2	5	1	2	0	3	1	13	5	5	7	3	2	4	3	3	3	1	3	0	3	78
December	3	4	4	7	6	2	0	3	1	1	4	3	10	3	3	2	2	3	2	1	0	2	0	0	66
Total,	77	53	52	39	27	14	17	21	21	28	67	58	58	36	44	23	26	29	18	27	13	20	3	13	789

In addition to the above, those buried from the Alms-House and the Town's Poor, whose ages and diseases are unknown, amount to - - - 192
Still-born, - - - - - 89

Total, - - - 1070

The Deaths above were caused by Diseases and Casualties as follows, viz.

Apoplexy, - 6	Croup, - - - 9	Drink'g c'd wat'r 2	Bilious, 10	Puerperal, -	Infant. Disease 147	Poison, - - - 1	Still-born, 89
Burns & Scalds, 3	Cyanche Trachealis 8	Dropsy - - - 23	Nervous, 4	Fits, - - - 1	Influenza, - - - 1	Phthisis, - - - 1	Sudden, 13
Cancers, - - 3	Debility, - - - 9	Drowned, - - 13	Scarlatina, 2	Hepatitis, -	Sanity, - - - 4	Dumy, - - - 4	Suicide, 1
Casualty, - - 8	Dyspepy, - - - 2	Dysentery, - - 12	Rheumatic, 6	Hæmorrhagia, -	Intemperance, 1	Sticks, - - - 1	Suffocation, 1
Cholera Morbus, 11	Diarrhoea, - - - 1	Fever Typhus, 108	Malignant, 32	Hæmia, - - - 1	Intemperance, 1	Verberatic, - - - 1	Teething, 7
Cholera Infant. 7	Diseases of the heart, 3	Pulmonic, 46	Worm, - 7	Hooching Cough, -	Killed in a duel, 2	Verlatina Angino 2	Tetanus, - 1
Consumption, 174	" unknown, 192	" Pleurisy, 3	" Yellow, - 1	Hydrocephalus, -	Old Age, - - - 5	Idem, - - - 5	Total, 1070

N. B. The above deaths include all who died in Town and in the Alms-House. There were also eighteen deaths in the Hospital on Rainsford's Island, including those who were sent from town and who arrived sick in vessels which were quarantined.

Published by order of the Board of Health,

JAMES ROBINSON, Secretary.

Boston, January 19, 1820.

LITERARY NOTICE.

New Publication.

THE SAILORS PHYSICIAN, exhibiting the symptoms, causes and treatment of diseases, and hurts, incident to seamen, and passengers, in merchant vessels, with directions for preserving their health in sickly climates; intended to afford advice to such persons while at sea, where a physician cannot be consulted. By **USHER PARSONS, M.D.** Surgeon in the United States Navy.—Cambridge, Hilliard and Metcalf, 8vo. pp. 216 Price, \$1 50 in boards.

Besides the subjects mentioned in the title, the book contains,

1. Some valuable directions for preserving fresh provisions and other articles of food in long sea voyages—for correcting the morbid tendency of a long continued sea diet—for purifying water, and for obtaining fresh water from salt.

2. The seasons of sickness and the diseases incident to strangers in different parts of the world.

3. An appendix, containing a list and the proportions of medicines necessary in the medicine chest of a merchant vessel, according to the number of men, with the customary prices of each article in the United States, and lastly, directions for preparing medicines, food, &c. for the sick.

The book has very little to recommend it to the attention of medical men on shore, and therefore has no claim to a particular review in a medical journal. We can briefly observe respecting it, that a book of this kind is calculated to do much good to suffering seamen, and is much wanted in the merchant service of the United States; and that the writer's long acquaintance with nautical diseases qualifies him for undertaking such a work. The style and manner of execution throughout appears well adapted to the understandings of that class of readers for which the work is intended, and such therefore, as will make it more generally useful. This work is printed neatly, and on good paper. Occasional typographical errors are to be met with, some of which have been corrected in the table of *errata*.

[Communicated.]

In the Press.

Medical and Surgical Register, consisting chiefly of cases in the New-York Hospital. By **JOHN WATTS, JR. M.D.** **VALENTINE MOTT, M.D.** and **ALEXANDER H. STEVENS, M.D.**

NOTICE TO CORRESPONDENTS.

A case of singular species of Hemorrhage has been received.

Letters to a Clergyman on the Diseases of Literary Men, have been received. The Editors acknowledge their obligations to the author for his interesting communication, but have thought it would be more extensively useful if published in a work of a more miscellaneous character than the Medical Journal. It has been left with the publishers, who will deliver it to the author.

A paper containing a Topographical Sketch of Nahant, with comparative Meteorological Tables, and observations on its advantages as a Watering Place, was received too late for publication.

A Case of *Tænia* has also been received.

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